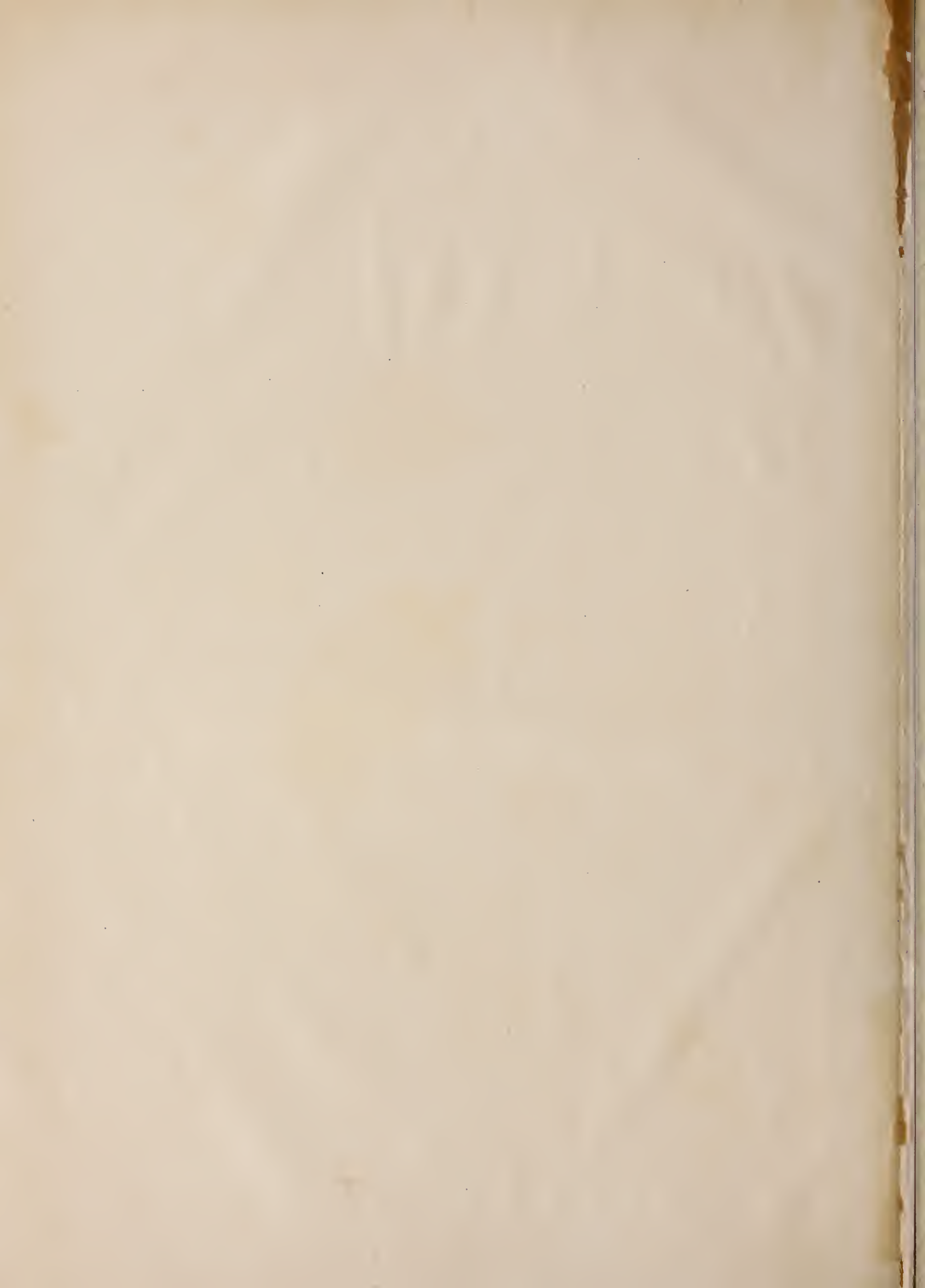


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FARM & FIRESIDE

The National Farm Magazine

JANUARY 1920

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Frederic Stanley

In This
Issue—

What is the Future of Food?

La Crosse TRACTOR

\$1250 Cut to \$895!

*12 Drawbar
Horsepower*
\$895

THE production of the La Crosse Tractor has now become so standardized that we are enabled to offer a reduction of \$355 from the former price of \$1250. You can now buy the standard 12-24 horsepower, three plow, Model G La Crosse Tractor for \$895. This price is for the tractor complete with belt pulley, fenders and governor ready for work.

We are more than doubling the production of this standard tractor in 1920. If you ever intend to have a tractor, here is your opportunity to get a dependable three plow machine at a price only made possible by our standardized quantity production.

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You have often heard your neighbor say, "A La Crosse Tractor means a Happy Farmer." There are thousands of La Crosse Tractors in successful use. The La Crosse is the tractor which is self-guiding in the furrow and turns short in its tracks to right or left with equal ease. It has the fewest number of parts and every part is easily accessible.

When desired, it is equipped with the Line Drive Attachment so you can drive it with reins like horses.

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You have often heard about the La Crosse simplified force-feed oiling system by which fresh oil is forced under 300 pounds pressure to every part of the motor. This does not waste lubricating oil as does the ordinary splash system; makes it impossible for any kerosene to touch the bearings; keeps the oil always fresh and yet uses it up so completely that draining the crank case is seldom necessary. It means long life and greater efficiency to every part of the motor.

You Must Order Immediately

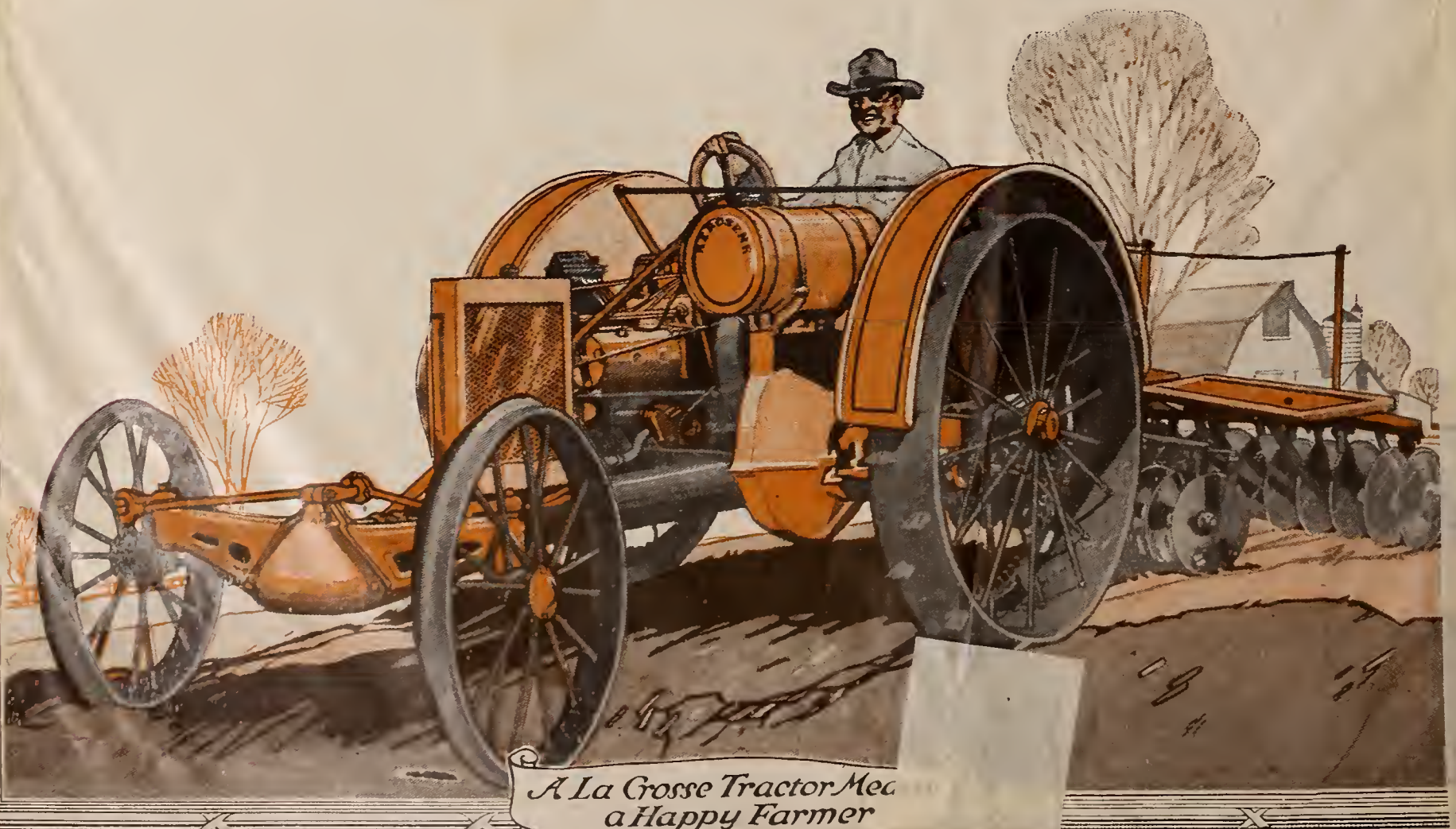
Even though production of La Crosse Model G will be more than doubled in 1920 the demand will probably greatly exceed the supply.

See your La Crosse dealer today, or if you do not know him, write or wire us for his name.

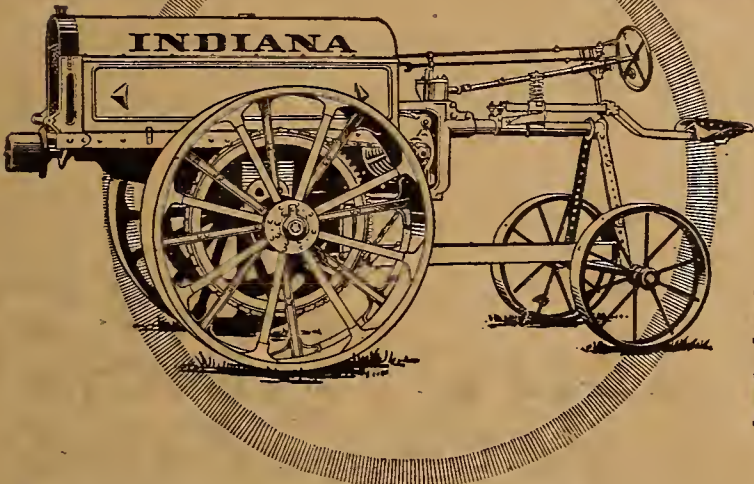
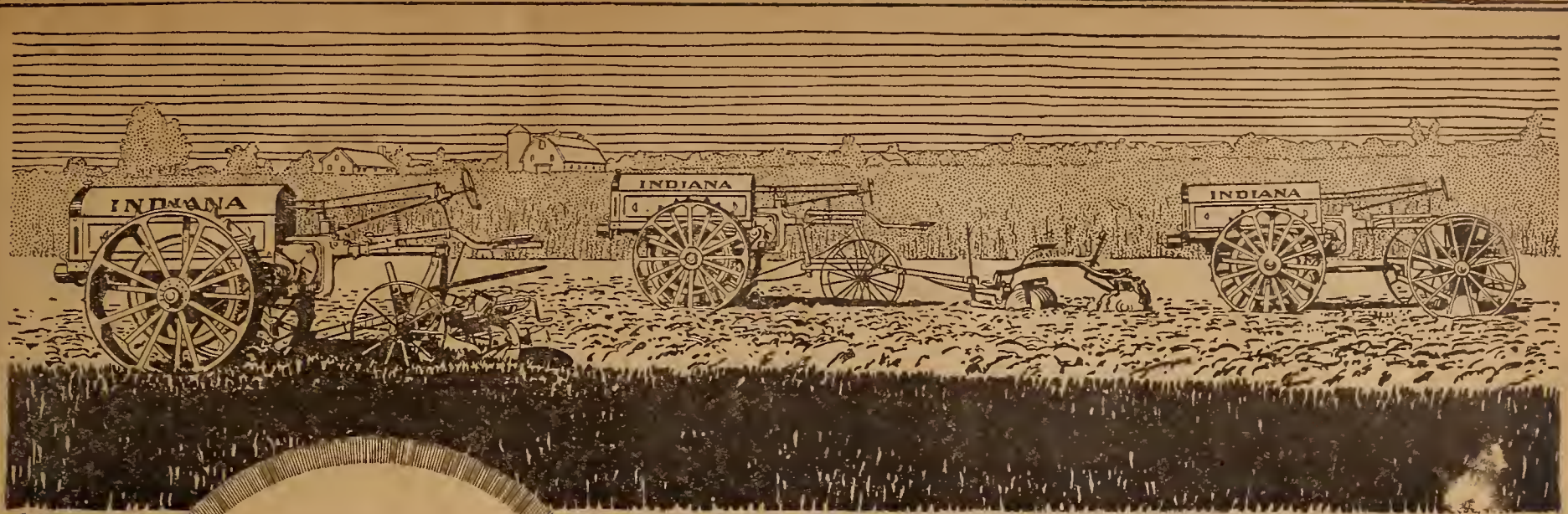
La Crosse Tractor Company

Department 041

La Crosse, Wisconsin



*A La Crosse Tractor Means
a Happy Farmer*



The One-Man Tractor You Can Use Every Day

It Really Replaces Horses and Mules

HERE is a one-man, single-unit Tractor you can use not just twenty-five or thirty days a year—but as many days as you now use your horses for field work. It will save its cost over and over again for you whether your farm is large or small. It costs about the same to buy as four horses and does more work than they can do.

It plows as much with disc or mold board as two good horse teams. And it cultivates, pulls harrows, discs, drills, rollers, mowers, binders, potato diggers, orchard tools—every implement you now have on your farm, and no expensive hitches are required. It uses the horse-tools and implements you have now, plow excepted—no need to spend hundreds of dollars for new tools and implements to use with the Indiana Tractor. The driver rides the implements—you don't need an extra man to ride the Tractor. It turns shorter than other types of tractors—backs up easy—handles nicely in close quarters.

The Indiana Tractor weighs no more than a farm team. That's why it really replaces horses and really saves money for every farmer. There is no waste of fuel and power. The Indiana Tractor was designed and perfected by the most skilled engineers and mechanics to do the work of horses without wasting power and fuel.

Write us for book of pictures, made from photographs showing the Indiana Tractor actually doing all the work that horses and mules do on a farm. IT'S THE BIGGEST TRACTOR PROPOSITION EVER OFFERED A DEALER. DEALERS SHOULD WRITE US QUICKLY.

It does a year's work of four horses at a gasoline and oil cost of about one-third the cost of feeding your four horses or mules for a year. Saves the cost of one man. It does light belt work economically. Farmers who have had big four-wheeled Tractors are now buying the Indiana to cultivate and work their row crops for they can use it to harrow, disc and drill on ground too soft for a heavy tractor.

The Indiana Tractor is "The World's Tractor". It has a dependable motor, made to stand up and last. Every part is made the very best, no unnecessary parts, it's simple in construction, any one can operate it and few repairs are ever necessary. Indiana Tractors are built by the old reliable company, that makes the Indiana Silo—America's most successful silo. Farmers everywhere know this company and its products, and that they are made to give satisfaction. Investigate the Indiana Tractor now.

INDIANA

ALL-ROUND
TRACTOR
"The World's Tractor"

Indiana Silo & Tractor Co.
Anderson, Indiana

Gentlemen: After having investigated at least a dozen leading makes of tractors I purchased an Indiana tractor from you. This is once that it paid big to investigate before purchasing for I believe I have the best tractor for all purposes that has so far been manufactured.

Every day I use it my opinion is confirmed by its good behavior. Its simplicity of construction is the most marked feature. One does not have to have a degree from a school of mechanics to understand it. Any farmer with a fair knowledge of machinery and a bit of horse sense can keep this tractor going without help.

I wish to state further that I have owned and operated other tractors before purchasing this one so that the tractor is not a new thing with me.

Yours truly,
BOYD HAWKINS
Gladehurst Ranch, Ft. Lauderdale, Fla.

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38 Indiana Building.....	Des Moines, Iowa	38 Live Stock Exchange Building.....	Fort Worth, Texas

IT isn't its long life, alone, that makes people think the Hupmobile is the best car of its class in the world.

They are influenced just as much by the car's consistent economy as they are by the years of continuous good service.

Economy in *The Comfort Car* isn't an indefinite quantity, but a positive saving which registers itself every day in every month.

By saving, we mean not only gasoline saving, but tire saving, and that *still greater* saving which results from marked infrequency of repair.

What is the Future of Food?

By Myron T. Herrick

Ex-Ambassador to France

THERE is great unrest among the people of the United States as a result of the war, which has broken down the entire economic system. The greatest source of discontent is the high price of food, coupled with the belief on the part of the consuming public that this is unnatural and unnecessary, and that they are being constantly pillaged.

Of course, there is some justification in this belief; but in large part it is due to misunderstanding of the fundamentals that underlie our food situation.

The people are bewilderedly striking around trying to hit heads without going to the real source of the trouble: which is food shortage coupled with increased cost of production, and the most expensive food-distribution system the world has ever known. They become the more confused because of the remedies being offered them from every side, which are not so much remedies as destructive and ill-founded attacks, which serve still further to unsettle and inflame the people without giving them relief.

The American people have never faced famine. There has always been abundance. The conditions that now prevail in various sections of the world where people are actually perishing for lack of nourishing food are impossible for our people to understand. Always when we have had money food has been obtainable, and we have always had money. It is hard to realize now the disagreeable fact that there is not now enough food in the world, and that this condition will continue until the world recovers from the disastrous effects of a four-year world war. The only remedy is increased production, aided by food conservation, for we are still a nation of wasters.

The question of food is as old as appetite. Until the developments of the last century, to obtain food in sufficient amount to sustain its population was the primary object of every organized government. To have enough to eat was the dream of all peoples, while life was a constant search for food.

In 1798, T. R. Malthus, an eminent English economist, first published his theory that population had so grown that it was passing food production, and predicted a very gloomy future for the coming peoples of the world. He held that while food might be increased at the rate of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, etc., population would increase in geometrical ratio—1, 2, 4, 8, 16, 32, 64, 128, 256, 512, etc.

Although this same idea had been advanced by Plato and other ancient philosophers, its publication by Malthus created a sensation and much discussion at that time. It so startled society that an organization calling themselves Neo-Malthusians sought to popularize official methods of checking the growth of population to offset the evil. We at least have advanced far enough to advocate increase of population, also increase of food production.

Malthus quoted tables to prove that there had been either a famine or a plague on an average of every seven and one-half years from the time of the coming of Christ to that date, with the inference that they had been beneficial in keeping the growth of population down to a point where the sustenance of the earth would maintain it. Inferentially, for the same reason, war had been a blessing to mankind, along with the plagues and famines. England at that time had a population of about 10,000,000 people, and Europe about 100,000,000, and this was thought to be about the limit in number that could be maintained by the possible production of food. The population of Europe is now about 475,000,000.

Malthus told the truth, as far as he went.

His fundamental error was in being unable to visualize the ingenuity of man, when stressed by necessity. He took into account the great possibilities of the then undeveloped American continent, but discounted them because of lack of transportation. The steamship and the railroad were then unborn. They have since made it possible to utilize the then seeming impossible areas of America for increased food production to the benefit of all peoples of the world. Of equal importance to the revolution in transportation is the assistance given to production by labor-saving machinery. Agriculture, the first learned of man's accomplishments, was the last to be developed, because it was left almost entirely to the lower classes—serfs, slaves, and tenants—and these were kept in dense ignorance.

The reaper, harvester, tractor, and other time and labor saving agricultural machinery, which did not exist a century ago, have made it possible to feed the people Malthus predicted could not be fed.

A hundred years ago it took sixty-three hours to handle an acre of wheat, while now it takes less than three

so rapidly that production outgrew the increase of our population. Transportation grew rapidly in the same time. The inevitable result was an era of food surpluses. It was during this time that in portions of the West corn was burned in place of coal, because it was cheaper and sold at 10 and 12 cents per bushel, hogs \$2 to \$3 per hundred, and other agricultural products at similarly low prices.

One effect of this period was to make Americans the most wasteful people on earth. That impress remains upon us as a people to-day.

Waste was incorporated into our table etiquette, so that "good manners" required leaving on the plate, to be thrown away, a portion of the food served. The war, with its doctrine of "the clean plate," did away with this silly custom.

This era of high production in America, with its problem of too much food instead of too little food, had a decided effect upon Continental Europe. The cheap food from America had made it impossible for those countries to cultivate their land under prevailing systems in competition with America's cheaper land and labor-saving farm machin-

tinued, partly due to the unattractiveness of farm life.

Ohio had more acres in actual farm land in 1880 than in 1910. The census reports show there were less farms in the State in 1910 than in 1900, and fewer farms operated by their owners and more farms operated by tenants.

Between 1900 and 1910 the population of the nation increased 21 per cent, while the farm area increased but 15 per cent. In the same period the city population increased 35 per cent, and the rural population but 11 per cent. It seems safe to assume that the greater portion of the land increase for this decade consisted of acres that were actually considerably below the average of the United States in productive quality. In all probability the coming census will show a still greater divergence along these lines.

Before the passing of the era of overproduction, America had become the food reservoir of the world. Gradually we absorbed more and more of our own production, until, when the European war broke out, we had almost ceased to be a food-exporting nation, while Europe was drawing more heavily upon other sources of supply, notably Australia and Argentine, which had developed rapidly in the preceding half-century.

Our food problem, then, is not an evolution of war but a condition accentuated by the war. We were face to face with it before the war broke out. The political conventions of 1912 recognized it as a problem that had to be dealt with. But few realized that the evil was fundamental, and not one to be cured by legislation.

Before the outbreak of the European war the United States had been exporting annually about 5,500,000 tons of food. Production in Europe under the demand for man power for war immediately fell off very heavily, so that the food burden of the United States was increased fourfold as a minimum.

One hundred million men turned from production to destruction. The world surpluses were devoured, and production was inadequate to meet the demand.

When the United States entered the war, the already short supply of agricultural labor was drained by the demand for troops and the attractive wages offered in munition plants and other lines created by war. Yet, if the Allied cause was to win, America must increase her production, and increase her exports to Europe fourfold. As long as the war continued we were trying to meet a constantly increasing and insistent demand for food with a continuously decreasing production.

National food control became necessary, and Mr. Hoover was brought home from Europe to assume command. Adverse crop conditions had cut the 1917 production short. The European nations were in a panic, and were wildly bidding against each other for our supplies. The need for immediate action was imperative. But Congress was slow. The Food Control Law should have passed by the middle of May. Instead, it was not passed until the tenth of August. The average price of food increased 20 per cent in forty days. This was a speculative increase. Wheat went to \$3.50 per bushel, and trading in the wheat exchanges was stopped by agreement. Hogs reached nearly \$20 per 100 pounds.

The Food Control Bill as finally passed and put into operation was a weak, grotesque measure, full of exemptions and hampering restrictions. It is probable that more good was actually accomplished through the patriotic co-operation of the American people than through the provisions of the law. [CONTINUED ON PAGE 36]



Photo by Paul Thompson

Governor Herrick with his famous smile

MYRON T. HERRICK was born on a farm out in Ohio. He is an excellent example of what a poor man can make of himself if he goes at it with the determination to win.

No one who saw the youngster leave the old farm home had any idea that in his lowly person reposed the strength that would some day make him twice governor of Ohio and American ambassador to France. And yet it was true. You never can tell from appearances how a man is going to turn out. The poor neighbor you look down on to-day may to-morrow excel you.

Herrick was born at Huntington, Ohio, in 1854. He later worked his way through Oberlin College and Ohio Wesleyan University. From there he went to Cleveland, and worked in a bank, studying law at night. He was admitted to the bar in 1878, and practiced law for eight years. After that he returned to banking as president of the Society for Savings in Cleveland. He was governor from 1903 to 1906, and ambassador to France during the Taft administration. He has been a lifelong student of rural credits, and has written several books on the subject. One of the finest things about him is his habit of helping young men to get started in life. We believe that what he has written is both interesting and valuable to us all.

THE EDITOR.

hours. Similar comparisons can be made in potatoes, hay, oats, and other products. Every bushel of wheat in the olden days required three hours of a man's life to handle, whereas it now requires about ten minutes. There would not have been enough labor to harvest this year's wheat crop if the old conditions had obtained. The immense production could not have been reaped by hand. As it was, there was great shortage of labor.

The era of improved machinery and the quick development of the West followed the Civil War in this country. This resulted in an era of the greatest overproduction of food in the history of mankind. The lands of the West were put under the plow

ery. As is now the condition in America, so then in Europe—distribution was clogged by the middleman. His elimination became necessary for the salvation of agriculture, and to meet the needs of the new conditions co-operative systems of buying and selling were developed. Rural credit systems were also organized, and gave relief. This tremendous overproduction continued in this country until about 1880. Then the pendulum began to swing the other way. Population of the cities began to increase more rapidly than the growth of our rural population. This was largely the result of overproduction and its unremunerative prices. This tendency of population to flock to the cities has con-

How I Drove Fear Out of My Heart by Climbing Mountains

By Annie S. Peck

Champion Mountain Climber of the Western Hemisphere

PERHAPS you, sitting in your comfortable farm home, wonder why anyone, and above all a woman, should want to climb mountains.

I will answer by saying that the motive behind my desire to scale the lofty peaks where others have tried and failed, and where some have tried and died, is the same motive that makes your husband want to be a successful farmer, that makes you want to be a good wife, and that makes your children want to outstrip other children in their pig, calf, or other club work.

That motive is the desire to achieve, to excel—to do something that is not easy to do, and do it better than anyone else has done it.

But, most of all, I did it because I was afraid to do it. I was a born coward. It took all the will I had to make up my mind to drive myself to do what others did, but of which I was afraid. I determined while still a little girl to drive the fear out of myself, and by mountain-climbing I have done it. I accomplished it because I desired above all else to achieve it.

The desire to achieve is the key that unlocks the door to most of the world's good things. Without it, no person ever gets anywhere. You have got to love what you are doing, and love it for the sake of doing it. Otherwise you will never rise above the common level.

No money, no power, no position, no anything, can get you anywhere in any line of activity unless you have the ambition to achieve, which comes of a love of what you are doing. If you can't enthuse, you can't succeed. If you don't enthuse over what you are doing, do something you can enthuse over.

There were indeed those who called me insane when I was preparing for my first and second expeditions to South America, though I am not aware that anyone has made such an accusation since I returned in triumph.

But let me assure all who enjoy athletics of any sort that for one of sound physique there is no more delightful and invigorating form of exercise than mountain-climbing, at least up to 15,000 feet. Above that altitude I confess it ceases to be fun, and is unadulterated hard labor. I find pleasure in going where no man before has trod, and where few can follow, enjoying at the same time the grandeur and solitude of those lofty heights.

Being brought up among hills—we had a portion of one in our back yard—I always liked to climb them; but not until I saw the majestic Matterhorn towering before me did the inspiration and determination arise to conquer a great mountain. For to one of spirit a mountain, great or small, seems to utter a challenge; the steeper the cliffs, the higher the peak, the stronger the defiance, the greater the joy of conquest. I felt that I should never be happy until I had scaled those splendid cliffs to their topmost height.

While about twenty persons have been killed on the Matterhorn, its ascent is not considered by experts a great achievement (it is merely child's play in comparison with that of Huascarán), yet the many who on seeing the mountain declare that they would not climb it for \$10,000 are disposed to consider it quite a feat. I climbed it, and later decided to attempt something worth while—the conquest of a virgin peak,

the goal of every ambitious mountaineer.

My attention being called to Mt. Sorata in Bolivia, as having an altitude of 24,000 feet, I resolved, if possible, to undertake its

miniously to La Paz, and later to New York.

I could not leave the matter, so the next year, with scanty funds, I went down alone. With the help of an Austrian, pre-

my steps thither, and with the natives made two attempts on this magnificent mountain. On the second attempt, when we gained a height of 17,000 feet, I spent two nights in a small tent with five Indians. So late in the season the mountain was in no condition for climbing, but as the Indians were more valiant than those I had in Bolivia I went down again two years later, though with still more scanty funds, hoping that with the same men I might reach the desired goal.

Unhappily the two best Indians had gone away to work at the islands. Those now provided were a cowardly lot, who after one night on the ice absolutely refused to advance. One of the Indians, who below had promised to go with me to the death, balked at the first bit of soft snow where he sank halfway to his knees. After our return he asserted to his friends that we waded through snow breast-high, that the señorita sat down and wept, declaring that we could go no farther.

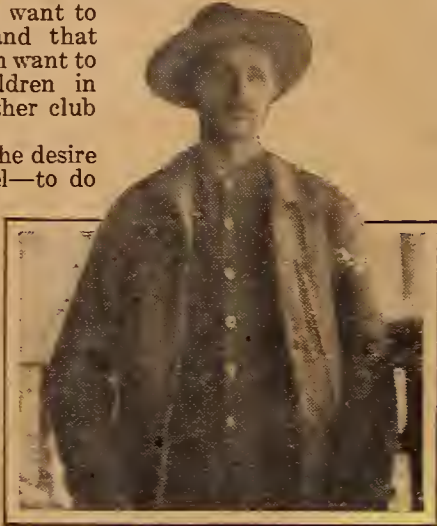
A "loco" gentleman from a neighboring town, who had been of the party, now declared that he would bring cholos (half-breeds) from his town for a second attempt. These he said would not be superstitious like the Indians, who had feared that if they went higher they would be changed into stone. The cholos, however, proved insubordinate; in spite of watching they drank up part of the alcohol which was carried to burn in two alcohol stoves; after two nights on the glacier it was useless to proceed.

It was plain that Swiss guides were an absolute necessity, as I had believed from the first. Two years more and I was able to bring over two of these, and then to feel sure of my goal. Both were good men, but on the first climb one was affected with *soroche*, mountain sickness, at a height of 16,000 feet, and after two nights on the glacier he retreated to Yungay, the town at the foot of the mountain. With but one guide and two Indian porters left I went on.

The third night in our little tent, flap, flap, went sides and doors, and a howling wind threatened to hurl us to destruction. At last, for the first time, I was between the two peaks, where on all sides were caverns, yawning crevasses, icefalls, perpendicular walls of snow, a heterogeneous mass of everything belonging to the ice world. Presently confronting us was a nearly perpendicular wall of snow 300 feet high, at an angle of 80 to 85 degrees, where no detour was possible. In this wall, so steep that twice my knee struck the snow above, Gabriel cut large steps zigzag. To climb thus for 180 feet, the more solid part of the wall, was terrifying.

The day following we reached the saddle, a broad, flat section, perhaps one-fourth of a mile wide and one-half a mile through. The tent could not be carried farther, so we must reach the summit from here and return the same day. Setting out at 6:15 A. M., we toiled up that steep snowclad slope with an angle of 40 to 60 degrees. After the first hour Gabriel had to cut steps, then hold the rope for me to advance, the porters following in the rear, all on the same rope.

At 2:15 P. M. I inquired how much longer it would take to reach the summit. Gabriel looking up then responded: "It would be a risk." I felt, a large one, for two days before, soon after ascending the great wall, which he had done twice, he had remarked, "I am almost [CONTINUED ON PAGE 70]"



This is Rudolf, one of the two Swiss guides Miss Peck took with her to South America to climb Mt. Huascarán. He is the one who lost part of both hands and one foot as a result of freezing while on this world-record climb. His last name is Tangwalder



This is Miss Peck's camp, halfway up the steep side of Huascarán, which is more than 21,000 feet above sea level. You will get some idea of what this means when you remember that the timberline begins at about 10,000 feet. Vegetation will not grow above that height



This is Gabriel Zumtangwald, the other Swiss guide Miss Peck imported to help her win the mountain-climbing championship of the Western Hemisphere, which she has held for eleven years

ascent, which would break the world's record if these figures proved correct.

Unhappily I had no funds for the enterprise, and neither magazine or newspaper nor advertiser or sportsman could be induced to lend

This is Miss Peck as she appears at home. She is an authority on modern Greek and archaeology, and the author of several



books on South American trade and social conditions. Mountain-climbing is merely a side line, a hobby, with her

books on South American trade and social conditions. Mountain-climbing is merely a side line, a hobby, with her

Where You and I Come in on Scaling the Heights

MISS ANNIE S. PECK is acknowledged to be the world's greatest woman mountain climber. She has scaled most of the famous peaks, including the Matterhorn, the Alps, and the great mountains of South America. She has held the climbing championship of the Western Hemisphere for eleven years, having climbed virgin ranges never before touched by the foot of man.

Miss Peck's home originally was in Rhode Island, near Providence, but she has traveled so much, and done so much, that she really deserves the title "Citizen of the World."

The real point of the thrilling story of how, with more than one hair-breadth escape from death, she conquered the heights of Huascarán is the indomitable courage and pluck she displayed in the face of discouragements and difficulties. If each of us would bring to the doing of our daily work and the solution of our everyday problems only half the determination she displayed in climbing that stubborn mountain, we would all get a lot further in this world. As one person who read her story said:

"Few people have ever climbed high mountains with more meager resources, and when Miss Peck's indomitable foot is planted at last on the summit of Huascarán we breathe a sigh of relief that so much grit did not go unrewarded."

THE EDITOR.

name and resources to the expedition. Five years elapsed before I was able to set out for South America. Arriving at last at the foot of the great mountain at an altitude of 15,300 feet, the Indian porters deserted, and the stalwart American scientist accompanying me, and the two guides who had come from Switzerland for the purpose, refused to proceed without them. Heartbroken I was obliged to return igno-

slope of 60 degrees, at the brink of a crevasse into which a careless step might have hurled me, I found that the men had untied the rope, when of course I was compelled to retreat, as even Swiss guides do not climb alone in such a place.

Meanwhile I had learned that Mt. Sorata was not so high as I had hoped, and that it was surpassed by Mt. Huascarán in Peru; so in September of the same year I turned

Ten Good Rules to Follow in Handling Your Money

By Albert Sidney Gregg

MURRAY D. LINCOLN, who is in charge of the agricultural department of the Society for Savings, Cleveland, Ohio, is constantly studying ways and means for improving the finances of farmers. He has a sympathetic understanding of the problems of the farmer, for he was born and raised a farmer, and he knows a lot about banking, because he has been connected with banks for the last five years, since he quit farming.

He knows how the farmer looks at the banker, and how the banker looks at the farmer; and he knows that they do not always see eye to eye in matters of common interest. Therefore what he says is based on inside personal knowledge. With these facts in mind I asked Lincoln to name ten ways by which you, as a farmer, could improve your finances. After a little talk he suggested ten points which may be of some help. At least, those who have diligently observed what he advises have made progress. Here are his ten suggestions; and, following them, he takes each one up and explains it in detail:

1. Keep some form of accounts.
2. Have a checking account at some bank.
3. File an agricultural statement with your banker.
4. Make a practice of consulting your banker about your farm finances.
5. Join the Federal Farm Bureau.
6. Keep up your farm buildings.
7. House your farm machinery.
8. Put in diversified crops.
9. Get into the fight for better roads, schools, and churches.
10. Subscribe for a reliable farm paper.

In explaining these points Lincoln said: "You, as a farmer, are a business man, and you should have some sort of records showing how much you took in and how much you paid out during the year. If you pride yourself on your ability to keep accounts in your head without books, remember that the trouble with that method is that it is so hard to fix up a statement out of your head that will satisfy a banker in case you wish to borrow money. A written record is far more satisfactory, and more apt to get you the money.

"An increasing number of farmers keep books, and more and more of them each year are going right down into the costs and the profits of each kind of crop, and even the loss or the profit on a particular cow. This may not always be practicable, but it is possible to keep a record of what you sold, what you got for it, what you bought and price paid for it. With such a record you know how you stand all the time.

"IT IS a little tedious, and sometimes a good deal of a bother, to keep such records right up to date, but it is well worth all the time and bother it takes. No merchant would think of making a success without a set of books. Indeed, the mercantile reports state that slack bookkeeping is responsible for many business failures, simply because the merchant is *guessing* in place of *acting on positive knowledge* about his affairs. Guessing is just as much out of place in farm finances as is the old rule of thumb in making measurements, or stepping off a piece of land in place of using a chain.

"Every farmer should maintain a checking account and, if possible, a savings account at his bank. There are many advantages in doing this, and with the rural free delivery established in nearly every county and town in our country it is much easier and more convenient to do your banking by mail than most people realize.

"The chief advantage of a checking account is that you have a receipt for all payments. If all money is deposited and all bills paid through such an account, and the purpose for which the check is drawn is written down as well as for what money is received, you will have a fairly good system of accounts right on the stub of your check book. Also, the banker can get an idea of the size of your business by the amount of money you deposit, and from that he can help to determine the amount he can loan you. A savings account should always be maintained for an emergency or

opportunity. Both come in every man's life, and you should be prepared.

"Get your business in such shape that your bank can loan you enough money to pay cash for all your purchases. Under the now too prevalent system of having the merchant trust the farmer for his goods from one season to another, the merchant is really the farmer's banker. And for doing this the merchant exacts a toll far in excess of the six per cent usually charged for a straight bank loan. In the purchase of fertilizers, machinery, and the like, ten per cent or more is generally saved by paying cash.

"The suggestion that you file an agricultural statement with your banker may not stir your enthusiasm, but it really is worth while. Don't be afraid the banker is going to tell anyone about your financial secrets. Your statement will be kept under lock and key, and nobody but the bank officials will be allowed even to look at it, and it is to the highest interest of the bank to treat every such statement as highly confidential. The banker knows that if he should betray this confidence his business would suffer. Give the banker your confidence, and he will richly reward you in many unexpected ways. Make it a practice to consult the banker about your farm finances. His advice will be worth money to you, for he is an expert in finances or he would not be a banker. You may obtain the benefit of his experience, observation, and judgment just by asking for it.

"Don't get the idea that because the banker may not know as much about raising a crop as you do that he cannot help you. Raising a crop of corn is one thing, but managing the cash you get from that crop is quite another thing. Make a sharp distinction between the two, and apply to farm finances the same principle that you apply to running the farm itself. In handling soil and seed you are a specialist, but when you buy a tractor or an automobile you need the aid of a specialist to show you how to operate the machine. Likewise, the banker is a specialist in finance and is eager to serve you, and you will both profit by the transaction. He is willing to serve a farmer just as he serves the merchant or manufacturer, and all who do business find it profitable to take advantage of his special knowledge. If you haven't a banker you feel you can trust, do business with one you *can* trust.

"The case of Mr. B. will illustrate my point: He applied to the bank for a loan of \$1,000, and in making up his statement

he set forth that his property, valued at \$10,000, had a mortgage of \$4,000 on it. In examining the papers it was discovered that he really did not have title to the property. He had bought it on a land contract, to be paid for at the rate of \$500 a year. It further developed that he had missed one annual payment, with the verbal consent of the owner.

"There was a clause in the contract to the effect that if he failed to make an annual payment of \$500 the land should revert to the owner without any legal process, all payments up to that time to be counted as rent. Mr. B. was told that in view of his failure to obtain the extension of his payments in writing the farm could be taken away from him and he would be helpless.

His predicament was further complicated by the fact that the original owner had died and the contract was now held by the heirs.

"When Mr. B. really saw how matters stood he asked us to help him readjust the matter. We did so by quietly paying off the balance due on the contract, and taking a straight first mortgage from Mr. B. for the amount advanced. Thus the banker helped him get his property into a shape that gave him protection at every point.

"Such instances as the above could be multiplied indefinitely. They include all kinds of men who do business with banks, for merchants and manufacturers who ignore the banker get into business trouble that could have been avoided, quite as much as the farmer.

"Aside from the value of the buildings and the machinery considered by themselves, a farmer's financial standing is affected by the way he treats his barns and tools. When a bank appraiser looks over the property of a farmer who is seeking a loan, he is sure to be unfavorably impressed by run-down buildings, leaky barns, and rusty machinery standing out in the weather. A banker hesitates about making a loan to any kind of a customer who is wasteful. A little paint and a few hours' carpentering will often make a big difference in the looks of farm buildings, fences, and sheds for machinery.

"A farmer who joins the Farm Bureau gets in touch with the government and state agencies main-

tained especially to aid farmers financially. Membership is a valuable asset in two ways: The member is brought into direct contact with the very latest developments in scientific agriculture, and in addition he gets a rating with the banker as a progressive citizen, and therefore is looked upon as a better risk.

"The same is true when he gets into the fight for better roads, better schools, and better churches. He is interested in community welfare, and such an interest has its financial side, because it shows character, and character is the basis of confidence. When you wish to enlist the co-operation of the banker, or of anyone, in fact, you must first win confidence, and confidence is based on character. Anything you may do that shows to the community that you are a man of character, no matter what your occupation, is a positive financial asset, so don't make the mistake of looking upon community service as a waste of time. Effort invested in such enterprises will come back to you in the form of a position of influence in the community, which in the course of time will open the way to many business opportunities.

"IN SUGGESTING a greater diversity of crops I had the South in mind. For many years the South has depended on cotton almost exclusively, but since the war, and under government stimulation, increasing attention has been given to the raising of hogs, cattle, and garden truck. It is obviously unwise for anybody, farmer or otherwise, to put all his eggs in one basket by depending too much on any one crop. In the North, farming is more diversified, but there are instances where the farmer is in a rut in the matter of crops. It is to his financial interest to spread out as much as he can, so that failure or low prices in any one line will not affect him seriously.

"I suggest a farm paper, not because I am talking to the representative of such a publication, but because it pays the farmer to read about the experiences of other farmers. Therefore he should have a farm magazine come to his home regularly which is filled to the brim with articles showing what other farmers have accomplished, or containing the views of men who understand what the farmer is up against.

"Like the rest of us who must hustle for a living, the farmer has little time for theories. He wants facts. The farm paper is the best place for him to find facts pertaining to his own business.

"What do you regard as the chief obstacle to the expansion of farming as a business?" Lincoln was asked.

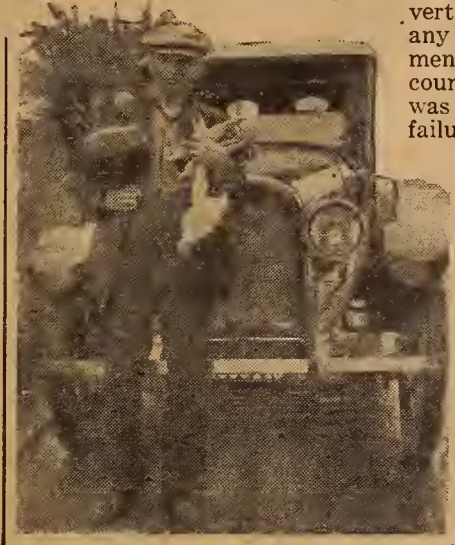
"The fear of debt," was the prompt reply. "Of course, there may be other contributing causes, but the two words that the average farmer hates with all his nature are 'interest' and 'mortgage.'

"For many years a mortgage on a farm has been regarded as a mark of disgrace, a sure sign of something wrong in the farmer whose property is mortgaged. Farmers look upon paying off a mortgage as the supreme achievement of a lifetime of hard toil, and to suggest putting another mortgage on the land is akin to proposing that they go into debt again. And yet, looked at in the right light, a mortgage becomes a sign of progress, rather than a badge of incapacity.

"This matter of mortgaging land touches the vital difference between financing a store and financing a farm. In loaning money to a merchant the banker expects to get it back in thirty to sixty days. A farmer cannot possibly expect to turn around in his operations inside of a year, or possibly nine months, so he must have money for a longer period. It is the fact that a farmer must have from nine months to a year on a loan, and sometimes longer; that he cannot be financed in the same way that a merchant is financed.

"What we need beyond anything else is a system by which a farmer with limited means could be helped in the matter of buying stock or improved machinery, but about the only way that can be done now is for the farmer to arrange for a loan and give security, and the best security he can offer is a mortgage.

"But here is the big point: he should always plan so that the increase in returns will take care of his loan. There should be a nice adjustment between the loan and the investment, and it is at that point that the banker can be of the greatest service to the farmer. Suppose a man borrows \$1,000 to invest in cattle, tile draining, or better machinery: the time of the loan should be so fixed that the [CONTINUED ON PAGE 66]



Albert Sidney Gregg, who got the information in this article about banking from Mr. Lincoln, is well known to magazine readers by name, but here we present him "on the hoof," bearing in his arms the net result of a day's squirrel-hunting in the country around his home near Cleveland, Ohio. The only "squirrel" he caught looks suspiciously like a—well, say, a chicken. Let's hope he bought it.

Who Am I?

(From "American Machinist")

I AM more powerful than the combined armies of the universe.

I have destroyed more men than all the wars of the world.

I am more deadly than bullets, and I have wrecked more homes than the mightiest of siege guns.

I spare no one, and find my victims among the rich and poor alike, the young and the old, the strong and the weak. Widows and orphans know me.

I loom up to such proportions that I cast my shadows over every field of labor, from the turning of the grindstone to the moving of every train.

I massacre thousands and thousands of wage earners in a year.

I lurk in unseen places, and do most of my work silently.

You are warned against me, but you heed not.

I am relentless, I am everywhere—in the house, on the street, in the factory, at the railroad crossings and on the sea.

I bring sickness, degradation, and death, yet few seek to avoid me.

I destroy, crush or maim; I give nothing, but I take all.

I am Carelessness.

"That Darned Lime-Sulphur"

Being the true story of how we went out to spray fruit trees and nearly ruined ourselves

By Dana Bartlett

DID you ever meet up with lime-sulphur? Ever spray with it? And, if so, did you ever know of a more fiendish concoction on the face of the earth? I have. And I never did.

Ah, well, it was a great adventure, that first experience of ours with lime-sulphur—a sort of tragedy, you might say, which the golden haze the poet connects with bygone days has changed to light comedy.

Hence we can review in complacent indulgence our first adventure and let the story be told:

We moved in late in the winter, and were pretty busy inside the house, painting and papering and whitewashing, so Roy was the only one who attended the farmers' institute. At supper that night Dad asked him what he had learned.

"We got to spray those apple trees right off," he said.

"What for?" I asked.

"San José scale. Use lime-sulphur, the fellow said," answered Roy. By "the fellow" he meant the speaker at the institute, one of the professors from the agricultural college.

We had seen people spraying shade trees with arsenate of lead for gipsy and brown-tailed moths, but lime-sulphur for fruit trees was a new one. However, we intended to do things right, and that settled it. Accordingly, when I took Jerry over to Milltown to have his shoes set over, Dad told me to hitch into the lumber wagon, gave me some money, and told me to get some of this lime-sulphur stuff.

I got it all right. At the hardware store they asked me how much I wanted.

"How does it come?" I asked.

"Gallon, five-gallon, ten-gallon cans, and by the barrel," I was told.

"Better get enough," I thought. "Cheaper by the barrel, too." So I ordered a barrel.

Say, did you ever load a barrel of lime-sulphur? Try it some time. Six hundred pounds if it's an ounce. It leaked a little too, and I'd worn some pretty fair clothes, because I'd seen, the last time there, a girl I was hopefully afraid I might see again. Well, I got the ding-busted thing in with some help, and drove around the square to the grocery, where I was to buy a lot of stuff. Painfully conscious of the aroma from that barrel, I was glad to escape from the wagon and entered the store with a sigh of relief.

Presently the boss, putting up an order at a near-by counter, began to sniff and look under the counter.

"Charlie," he growled to a clerk in an undertone, "didn't I tell you not to chuck broken eggs under here? Take 'em out back."

"I didn't put no—" Charlie was explaining in angry protest as I moved away.

"Put up this order when you get round to it, and bring it out to the wagon," I said hurriedly to another clerk. "I've got to hold that horse of mine," I added, as I bolted for the door.

At the door I met this girl I had been thinking of on the way over. She was just entering with another girl. I never have been able to get acquainted with either of them.

Well, I got the blasted stuff home at last, and though I unloaded it in the wagon shed and changed my clothes in the barn, the lime-sulphur aroma entered the house in the lard. Roy maintained that the kerosene smelled of lime-sulphur.

A day or two of peace and quiet, then—"I don't want that stuff 'round any more," said Dad. "We'll spray it out tomorrow and get rid of it."

Now among other things we acquired with the farm, was a barrel sprayer with hose and extension rod. This we dug out from under the old lumber we had piled on it when we laid a new floor in the horse stalls.

"Better use that lumber wagon, hadn't we, Dad?" I asked.

Roy piped up:

"No, use the spring wagon."

"That's higher," I objected, thinking of lifting that barrel into it.

"That's what we want it for, simp," said Roy. "We can reach higher by standing in it."



So up the hill we started.

Roy driving, old Jerry laying into the collar in good shape. I trailing after

— Now, Roy is my kid brother, and I never like to admit that he knows anything about anything, but he had been to the farmers' institute and his authority was not to be denied.

"Have it your way," I conceded, and hitched into the spring wagon.

After gee-hawing around a while, triggering the wheels, fooling with planks, and so on, we finally got mad and lifted the sprayer right into the wagon by main strength.

"Now we put in the water," said Roy. "Yes, sir," said I, and we took the rig down to the watering trough.

"How much does a barrel hold?" asked Dad.

"Search me," from Roy.

"Dunno," said I.

"Well," said Dad, "we can find out. Roy, you get that gallon measure."

So we measured it in, a gallon at a time.

fore we got the thing under control, drew our gallon and a third and poured it into the sprayer. Incidentally we smeared our hands rather liberally, to which we later attached more importance than we did at the time. Concentrated lime-sulphur is not to be handled without gloves, unless it is with care.

"All set," said I.

"Let's go," answered Roy. "Wake up there, Jerry."

"Where'll we start in, Dad?" I called as I passed the barn.

"On the hill," said Dad.

So up the hill we started, Roy driving, old Jerry laying into the collar in good shape, I trailing after him with the extension rod.

"Hey, look where you're goin'!" I shouted, but it was too late.

Roy had turned to drive along the slope, under the first row of trees, the spring on the off side had accommodately let down, and the sprayer rolled gracefully out, dragging the hose along. It almost made a somersault before it hit the ground, then it rolled a bit and settled down finally, its life blood flowing out of the top, a beautiful muddy yellow stream.

"The feller never said not to use a spring wagon in spraying," observed Roy after a time of listening to the gurgle.

"Probably never thought anybody'd be fool enough to do it on a side hill," I replied.

Well, we let the stuff run out, went down, changed wagons, once more filled the sprayer, which seemed none the worse for

horse, and carried the pump down to the shed. By that time the forenoon was gone.

We spent the afternoon tinkering with that thing. With hammer and cold chisel and kerosene we got it apart by dark. Next forenoon we put in a new packing, got the valves so they'd work, and rigged up a new screen. That afternoon we got the machine back into the barrel and went to work.

After I'd learned enough to keep the stuff out of my eyes, which principle I grasped fairly quickly, we got along well for a time. At first, though, I needed Shakespeare's assurance that there is more in this than meets the eye, for it seemed that my eyes were getting all of it. It may be good for 'em, though, for it surely cleans them out.

Then the nozzle clogged. I picked up a straw and poked the dirt away, and got the full force of it in my face.

"It might be wise to turn your shut-off before doing that again," said Roy sweetly.

I thanked him politely for his wise counsel, and invited him to try it himself. Then the nozzle clogged again. I saw that poking the sediment back was doing no lasting good and finally with a pipe wrench and a monkey wrench got the nozzle off, cleaned and returned it.

Another tree sprayed and the barrel was empty.

Eight trees, one barrel; say four barrells in a day by hustling—a hundred and fifty trees. Nice outlook!

"Cheer up," said Roy who is always optimistic. "Perhaps we'll break our legs or something and won't have to do it all. Anyhow, while this lasts we get out of milkin'."

That night we came in feeling that we knew all that was to be known about spraying, that we'd experienced practically everything that was to be experienced. We hadn't.

Next day we tried another nozzle Dad had found somewhere, and made a barrelful go better than twice as far as we had the first day. Alternating at the pump and with the rod we were getting on famously. In one place, anxious to reach a far-spreading limb on the further side, I stretched the hose to its last inch, and it parted from the rod, giving me a sleeveful of the stuff as it sank to the ground. Since then, in dragging the hose around behind me, I keep one hand on the hose and pull on the hose, not on the rod. Oh, yes, we ran over the hose a few times with the wagon, and cut it once when it lay just right on two stones. Outside of these little incidents, however, we went better and better, finishing up one evening just before supper.

We felt pretty jubilant, and Roy even ate some butter, which for several meals he had refused because its color reminded him of lime-sulphur.

That evening when I went up to bed I found Roy reading a bulletin from the agricultural college.

"Hauling manure to-morrow?" I asked.

"Uh-huh," said Roy listlessly.

I was nearly asleep when Roy pushed me in the ribs.

"What—" said I.

"Say, I been readin' this bulletin here, and we've done that sprayin' all wrong. That 1 to 30 is summer strength; we should have used winter strength."

Silence. "You're a hake of an expert!" I said. More silence. "Well, maybe if it's part strength we'll get part of the bugs," observed Roy optimistically. "Anyhow, we know how it's done."

"Yeah," said I. "It was a good rehearsal."

Take care of the orchard or use it for firewood. Trees unsprayed and not pruned are a source of loss to their owners and to their neighbors.

If You Are a County Agent, Please Read This

ONCE in a while you may run across some interesting facts that farmers everywhere ought to know. Maybe you and the farmers in your county have discovered an easier, better, or more economical way to do a certain thing. If so, why keep it all to yourselves? Why not write it out just as it happened, telling your own experience with the thing in your own words, and send it to FARM AND FIRESIDE. If it is available we will gladly pay you for it, and print it. And maybe, if we get enough valuable little stories from you all, we will print an occasional full page of county agents' ideas that have worked out.

THE EDITOR.

How much we really measured I don't know, because Dad went back to the house, and Roy and I got to chewing over his spilling some water down my sleeve when I passed it up to him, and we lost count. Anyway, we were usually pretty good guessers, and judged it was around twenty gallons when the thing seemed half full, so we called it forty-gallon capacity.

"How much dope goes in here?" I asked as we got it nearly filled.

Roy scratched his head.

"Oh," he said at last, "I remember. The feller said one gallon in thirty. That makes a gallon and a third for the barrellful."

Thereupon we tapped the keg, spilling several gallons on the floor of the shed be-

its tumble, went up again, navigated the side hill all right, and brought up under the first apple tree.

"Who's going to pump?" I asked.

"I'll pump a while," said Roy.

I uncoiled the hose, took my post under the tree, and stood ready, rod poised for action. Roy pumped. Nothing happened.

"Turn the shut-off," panted Roy, pumping faster and faster, with no more result.

I turned it. Nothing happened.

I pumped a while; no better results.

"Pump won't pump," said Roy.

"Yes, it does look that way," I assented.

We fooled and fiddled; finally we took the pump out of the barrel, unhitched our

Trout Tells How He Makes Spring Pigs at a Good Profit

By D. L. Trout

PRODUCING spring pigs at a profit is a lot easier for me than writing about them. But since I have learned many things from the experience of other farmers, I believe it is my duty to state how I handle my pigs.

I have been raising hogs ever since I was a boy. I remember that I took an active interest in hogs right off the reel. I liked cattle too, but they didn't hold the fascination as did the pigs. I was more or less afraid of steers, with their long horns; but the pigs would run from me, and I surely liked to chase the shotes with a stick when Dad wasn't looking.

As I grew older and took up farming for myself, I took to hogs. Of course, I feed cattle and sheep too, but my first love is the shote, and I still stick to them as the best money makers.

For the last twenty-five years I have been in the live-stock commission business at the Chicago yards, but have never lost my grip on the farm. I have two farms, both at Monon, Indiana, only a few hours from Chicago; and I spend half my time there.

I believe that farming, like any other business, needs close attention if one is to succeed. And this is the reason I spent a lot of time in the country. When there I spend as much time as I can with the hogs. If I happen to see the live-stock man sitting on the fence watching the pigs, I don't ask him why he is not working. Watching the pigs carefully is a good idea. You soon learn if any of them are not doing well, and can try to find out what is wrong.

I raise two litters of pigs each year—early spring and early summer pigs. I don't believe in two litters of pigs from one sow, either, because it works her too hard. I have two sets of sows—that is, all told I have 240 females, half of which I breed for the two seasons. Each sow farrows twice before I sell her—one spring and one summer litter.

While my records on the hog business of the farm are together, no division being made as to the time of farrow, I know the early spring pigs return me the greatest profit. I have the summer pigs mostly for following the cattle I feed every fall.

Up to a few years ago I raised hogs as most every other farmer does—that is, I had spring pigs, and then stocked them through for finishing either behind the cattle or when the new corn crop was ready for feeding. By "stocking" I mean carrying them along on grass with little or no corn.

Some of these hogs would land on the market during the winter, and prices were not so good, for we were in the midst of the packing season. Market records show prices are not as high then as the early fall, when good hogs are scarce.

I looked up this part of the market, and found I could get much better prices for my hogs if I would have them ready for market along in September or early October. The next year I had my pigs early, and decided to push them as best I could, and see what would happen. The result was that I got a very fine price, and found I could make the hogs cheaper if I handled them in the right way.

In the first place, the hogs gained steadily on a good feed, and reached the market when good hogs were scarce.

I have grade Duroc sows, on which I use a pure-bred Duroc boar. I have ten boars on the place, which I use for two years, then castrate and sell them on the market. I like to get yearling boars if I can, but I am not always successful. I only pay \$75 to \$100 for a boar. This kind produces a good type of pigs, and therefore is good enough for my use. I don't aim to get boars of the best families or blood in the Duroc breed—just an animal which, if castrated, would make a good market barrow.

These signs are good enough to assure me that the pigs he sires will have some of his size, shape, and general quality. My hogs gain well, because I have been breeding them up for a number of years, and they are of good quality too. That is a big item. The more quality a hog has without getting too fine, the better he will sell, I find. Usually quality hogs also gain well.

For spring pigs I breed from the middle of November to the first of December. This will bring the pigs from the first to the middle of April. I don't like to have all of the sows farrow at the same time, because I can give them better care if I have a few at a time.

My plan of breeding is simple, but effective. I operate on a fairly large scale, and haven't the time to handle breed sows. The way I do is to divide the sows for spring pigs in half, and put one bunch into different pastures in lots of 10 head each. Into each lot I place a young, vigorous boar, allowing him to run with the sows for two days. Then I take him out, and put in a fresh boar.

The animal I relieve is put into what I

I bring the sows into the farrowing pens about a week before they are ready to drop the pigs. These pens have small houses which also serve as their sleeping quarters during the cold weather or when they have no pigs and are running together. The houses are ample to take care of two to three sows without pigs. I put only one sow and her litter in each house.

By a series of small fences I can shut up the sows, so there will be one in each house. In back of each house is a small pasture or lot, 18 feet wide and 60 feet long. This is big enough for her in which to exercise. Now she is on a ration of two pounds of shelled corn and about three pounds of commercial feed, which I start to feed about two weeks before farrowing time.

ing a few pigs, but in the aggregate it means a whole lot, more than it appears.

Suppose, for instance, I lose seven pigs: that amounts to the size of the average litter. This means one sow is unproductive, and all the feed I have given her up to this time is a dead loss. Moreover, she returns no rent for the pasture, interest on my investment in her, and the labor expended in caring for her. Of course, I expect to lose some pigs; but I aim to cut the loss to a minimum.

When the pigs are about two weeks old they will begin to nibble and pick at the feed I give the sows. They will pick a bit here and there, and soon they get to eating regularly. As they learn to eat I increase the feed of the sow to take care of this.

Along in the latter part of August, when it warms up a bit, and the pigs are getting along nicely, I open the fence at the back end of the hog house, and let the sow and her litter on pasture. The pigs are strong and healthy, and feel pretty frisky, and soon they get to scooting all around.

The warm sunshine, I believe, does them a whole lot of good, and while the pasture does not afford them much feed at this time they get plenty of exercise and fresh air. All of the time I am feeding grain to the sows, so the pigs get milk and grain.

I like to see pigs playing around. It is a good sign. When I see a pig that goes over and lies down while the others are running about, playing horse, or whatever pigs play, I figure he is not so strong and well as the others. I feel sorry for that pig, for I know how a little boy feels if he has to sit around while his pals are playing. I try to find out what is wrong with the shote, and, if possible, help him.

When the pigs are far enough along so they can eat in good shape, I fix a self-feeder for them and the sows. Into this I put corn and tankage, and let them have all they want. If the sows have had but one litter, and I intend to keep them for another, I don't give them access to the feeder. In this case I build a fence around the feeder, leaving the bars far enough apart for the pigs to get enough.

After weaning I take the sows off, put them on a pasture by themselves, and take the feed away from them. If they have had two litters, and I intend to market them, I let them go to the feeders too. Along in August I market the sows, and a month or forty-five days later I start the pigs after them. Once the pigs are on the self-feeder, they are no more work other than keeping the feeders filled.

I figure my pigs do better than a pound a day while on a full feed of shelled corn and tankage. They have to make this gain to return a fair profit. I believe, when on full feed, a pig will eat four to five pounds of corn and from a quarter to a half pound of tankage daily.

To my mind, the big thing in getting spring pigs to the early market is to give them all they will eat, so as to keep them growing and fattening. This can be done in no other way than by pushing them on a balanced ration. The self-feeder, I believe, is the best way to push pigs. In this manner they will get plenty, and can balance their own ration.

When the Young Calf Travels

By W. A. Freehoff (Wisconsin)

IN MANY sections it is a common practice to buy calves two and three days old for vealing, in winter and spring. I have found the journey from one farm to the other sometimes injures the calf by chilling it, the result being scours, and possibly the loss of the calf later.

When selling a two-day-old Guernsey calf last winter, I was afraid that the new owner was taking a long chance. He solved the problem by bringing a large-sized sugar barrel. Some dry straw was put on the bottom of the barrel, and the calf curled up contentedly on this straw; and, protected by the sides of the barrel and a thick blanket, it made a six-mile journey through nearly zero weather none the worse for the experience.

It Takes a Pretty Wise Man to Know That He Doesn't Know It All



This is Mr. Trout

erings in Indiana. Like any wise farmer, he attends to see what he can learn from the other fellow.

D. L. TROUT is sixty-five years of age, and he has been a farmer all his life. For the last twenty-five years he has been in the commission business at Chicago, but his son Frost runs most of that while he farms. As a farmer he is a good business man, and he can make hogs with the best of them. Yet he doesn't brag about himself.

He has 1,000 acres of land at Monon, Indiana, much of which he bought years ago at \$40 an acre. The land needs draining, and he is doing that as fast as he can. He figures the draining will increase the value of the land very materially. As it stands, this undrained land is valued at \$125 an acre.

Among Indiana farmers he has the reputation of being one of the biggest and most successful producers. They speak highly of his ability, and yet, although Mr. Trout is wealthy, and his hog business returns him thousands of dollars each year, he says he doesn't know it all. It takes a pretty wise man to realize that. I have found him at many of the hog meetings and experiment station gatherings in Indiana. Like any wise farmer, he attends to see what he can learn from the other fellow.

call a rest pen, and feed him fairly heavily of corn and tankage, so that he will regain his strength and have plenty of rest. In two or three days I use him to spell off another boar. In about a week I have half the sows bred. Then I do the same thing with the remainder.

I don't mark the sows when they are bred, but keep a record of the date I turn in the boars. In this way I can tell within a week of when the sows will farrow.

Before and after the breeding season I have the boars in a separate pasture, with plenty of water and shade. I feed them a little corn and tankage every day for a few weeks before the breeding season, so they will be in nice condition. The pasture is big enough so they will get plenty of exercise.

Previous to being bred, the sows are on good blue-grass pasture, and about a week before I turn in the boars I start feeding the dams about two to three pounds of shelled corn.

After they are bred I feed a little more corn, and some tankage now and then. I feed just enough to keep them in a slightly gaining condition, but never enough to allow them to get fat. A sow that is too fat will not have a large litter, nor will the pigs be very strong and healthy.

They get plenty of exercise, for the pastures are large. I have 1,000 acres all told, most of it in grass. Exercise tends to keep the sows in health. In pans, all around the pasture, I have a mixture of salt, sulphur, wood ashes, and charcoal, which provide the minerals a hog demands now and then.

My sows, taking an average of the whole bunch, will have litters of seven pigs. Considering the scale on which we operate, I believe that is a mighty good average. I lose very few pigs.

I feed right up to the time the sows drop their pigs. On the day of farrowing I don't feed them anything but water. I heat it a little to take the chill off, but do not make it warm. Sometimes, if I have some ground grain handy, I make a very thin slop.

The day following, the sow gets plenty of water or thin slop, and perhaps a handful of commercial feed—just enough to keep her from getting too hungry. On the second day I feed a little corn, and gradually increase it until she is on a full feed of corn and commercial feed.

My idea is to keep the sows well fed, so they will have a good flow of milk. This is one thing that surely helps to grow the pigs in good shape, and it has a tendency to leave the litter free from runts caused by not getting enough milk. Then, again, plenty of milk at this time promotes healthy growth, and the pigs are better able to stand the cold, damp weather at this time of the spring.

In increasing the feed of the sows I do not aim to rush or push them any by over-feeding, but merely give them plenty. Too much feed is likely to cause a cake in the udder of a sow, since she will get too fat, and the pigs will be unable to milk her dry. By increasing the feed gradually this will not occur, for the sow will not get fat.

I keep the hog house well bedded, but not so much that it will cause the pigs to get overbeaten and sweat. If they do they are likely to catch cold and die. The bedding is changed often to keep the place clean. Sanitation at this time is very necessary, because I want to keep the pigs healthy and save everyone I can. Every shote I lose is just so much money out of my pocket. Very little is thought of los-

Are You as Good as the Horse You Drive?

(By William S. Hart)

THERE was once a scene being filmed in a motion picture in which a man rode a horse over a log across a canyon one hundred feet wide. The drop was eight feet. As the log was round the feat proved difficult.

It was accomplished successfully once, but a "close-up" on the middle of the log was necessary. The stunt had to be done over again.

The horse knew he had performed the feat once. He also knew that he could not do better. Consequently, he became nervous and fell off the log—and the rider fell under him. As the horse lay on the jagged stones in the canyon bottom, his front feet were not more than six inches from his master's face. The man could not move from where he lay, pinned under the horse.

If the horse had kicked or threshed about, the man's head would have been crushed. But the intelligent animal lay quiet. He did not kick; he did not even move. When aid came the man was released safely. Upon examination it was discovered that the horse's side was covered with nasty cuts and bruises. The animal had borne the pain unflinchingly, because he knew that if he moved it meant serious injury for his good master.

That horse was my pinto, and I was the man underneath.

Right then and there I decided that that pony would never again face the danger of fatal injury. He was retired two years ago to easy life on a ranch near my Hollywood studio.

He has grown "fat and sassy," and his motion-picture friends haven't seen him on the screen for two years, yet each week they send him presents of sugar cubes.

I merely mention this incident to bring out the point that I want to drive home in this brief article, and that is that if a man can truthfully say that he is as good as his horse he is a pretty good man. If you and I can live up to our good instincts as well as a good horse or a good dog lives up to his,

we have accomplished something. Measure up to animals! That is my personal creed.

How many faults would a man cut out if he would just remember not to do anything an animal wouldn't do?

God gave human beings mind as a higher power of creation—and we abuse our power of reason. God gave animals instinct—and they live up to it implicitly. A horse may balk, but he is on the level about it. There is no deceit; he just balks. You know exactly where he stands.

There is no human love and loyalty to exceed that which an animal may show to man. Everybody knows what good dogs do and have done. I don't care to have anything to do with a man who doesn't like dogs. In showing his loyalty and devotion to man the dog has a shade the best of other animals. Did it ever occur to you that man uses a horse but makes a companion of a good dog?

My early boyhood on the Dakota plains made me a lover of all animals. The horse and dog are my favorites, naturally. I have never been without one or the other as a companion. After I left the stage for

motion pictures I found I could gratify my lifelong desires, so I didn't limit myself.

Although my pinto pony is better known than my other pets, because of his "acting" in motion pictures, I glory in them all. I have an English bulldog, Congo, who is almost Darwin's missing link in looks, but he won't allow me to put my face within a foot of his if I have had a drink of alcohol.

One of the finest things that has happened to me in my motion-picture career is the opportunity to retire many broken-down broncs to a well-deserved life of leisure. I have in mind one 'Lizabeth, who doesn't happen to be a bronc, but she will illustrate the point. 'Lizabeth is only a high-powered mule.

In one of my latest pictures, "Wagon Tracks," we were camped on the Mojave desert, some 125 miles from Los Angeles. We had overlooked the fact that we needed a pack mule for my use on the trail. In our outfit there were thirty mule teams which had been hired from the sales yards in the city. These mules are mostly sold and used for grading camp work.

I picked out the mule that looked the part, and in twenty minutes the animal followed me around like a faithful dog. Incidentally, the mule did some work in the

picture that rivaled the feats of my horse. We named the mule Jupiter at first, but we had to change it to 'Lizabeth. I might add that 'Lizabeth is not working any more.

In the old days of the West, in the Dakota Territory, where I was raised, a boy was taught to love animals. In those days a man would be killed quicker for abusing a horse than for stealing one. Everybody knows what happened to horse thieves—a necktie party.

"Broke and afoot!"—this was and is the greatest calamity that could befall a cowboy. A Westerner's love for his horse amounts to religion. Yesterday the horse was as necessary to locomotion in the West as the legs of a commuter in New York. Therefore, folks who were raised in the Great West love and respect their four-footed friends.

But it wasn't only because horses could be ridden that made men count on them so much. It was also because they could be depended on to be on the job and faithful to their trust in an emergency. If you and I could always say that about ourselves, wouldn't it be fine?

This may not appeal to you as being much of an article, but it brings out a point that is part of my faith, and as I have said all I have to say, here I quit.

William S. Hart

Just One

IN OLDEN times it was customary for an officer to go round the towns and villages to see that the inhabitants had no weapons of war. On one of these tours an officer called on a worthy Scotch couple, and put the question to the old man:

"Any weapons of war in this house?" After scratching his head, Sandy looked at his better half and said:

"Indeed, yes; put oot your tongue, guid wife!"

Bealor Makes Baby Beef for Profit, Not Glory

As Reported by Leslie Troeger

This is picture of J. W. Bealor, the Illinois baby-beef feeder who tells this story, and his herd bull. A mighty fine-looking pair they make, too, we think



J. W. BEALOR of Bureau County, Illinois, has been feeding baby beef for twelve consecutive years. This is what he says about how and why he does it:

"It's strictly a money-making proposition with me. I'm not looking for glory or publicity. When I went to farming as a renter I hoped to own a farm of my own some day, and I have never had time to try out new wrinkles or theories.

"It looked to me as if raising calves and feeding them out young was a good thing because you were always sure to have the calves to feed if you grew them, and you knew you had an even feeding bunch.

"You didn't have to mortgage your soul to the banker to borrow the money to buy feeders. All the profit was yours. And that is the way I feel about it now, after these years of feeding, although many people will tell you that you can't afford to raise a beef calf on high-priced land like we have in my locality.

"The farm I am renting contains 440 acres. Seventy acres of it is in timber. That is an important item in raising baby beefs. You will find the cows with their calves in the shady ravines on the hot summer days, and all very contented. At night they will come out to graze. The timber is also a protection for the herd in cold weather, as the cows are never shedded.

"I have a lease which is simple and runs three years. It is renewed by adding a

simple agreement to that effect. The proceeds of the farm are split 50-50 with the owner, a banker who owns several other farms. One of the specifications in his leases is that live stock of some kind must be raised. Many tenants don't like to bother with stock, but it is because they want to get along as easy as they can, and don't care if the soil runs down. I also raise hogs, and make it a rule to raise and fatten two carloads a year.

"When I shipped the calves last spring I also shipped a load of shotes which sold within a dime of the top of the market. The calves sold at \$20 per hundredweight, the highest price I ever got. Last year the calves sold for \$16.25, the year before at \$10.75, and other years lower in proportion to other cattle prices.

"I take eighteen to twenty months to finish a bunch of calves for market. Some feeders push them harder, but I am well satisfied with my plan. The breeding herd is composed of Polled Angus. I like them, as there are no horns to bother with, and the calves mature quickly and into the best kind of beef animal. Old cows are replaced by heifers, and about every two years I market a carload of cows and heifers.

"A great deal of your success depends on the kind of herd header you select. Get

one that looks as if he would make a good steer himself. The best we ever had weighed near 2,000 pounds when full-grown, and he was smooth and an easy keeper. I generally buy the bull as a calf, and grow him out. You get a calf a little cheaper, and you know his disposition when he is grown up. A new calf is bought every few years.

"I aim to have the calves come in April, and as near the same time as possible, but that is not always easy to do. When they come near together they start out with equal chances at the feed bunk, and they get along better, as there are no large ones to bother the smaller ones. I like to have them come in April, as that starts them with the grass when it is young and tender. If they come much later they have to start on coarse grass, which their stomachs do not handle easily, and they also suffer more from the flies.

"The secret of making good with calves is to keep the baby fat. If they lose that they lose their plumpness, and you can never put it back on. As soon as the calves will start to eat grain I give it to them in a trough in a lot to themselves. At first they will only nibble at it, and you can put in only a little feed each day. Soon they will be eating regularly, and you can



One of Bealor's good breeding cows

start graining them night and morning.

"Bran, ground oats, cornmeal, and oilmeal make a good mixture. A couple of handfuls of oilmeal to a pail of grain is about right. Later on you can change the cornmeal to chopped ear corn. I like to feed molasses feed with that. It makes the corn more appetizing to spread the sweet feed over it. You ought to feed a little good clover hay also. Feed them to the end with the same ration.

"Some people have an idea that feeding baby beef is a fussy old woman's job, but that is not so. Keep the calves comfortable and doing well, and that is all there is to it. Never allow them to go back. It helps to curvy them down, but it's not necessary. I never do it. The feed lot is a small enclosure with a dirt bottom, and a shed open on the south for them to stay in when it's cold or wet. Keep it well bedded, so the calves can lie down any time. You will find that calves or steers like to lie down after eating, and if they are grunting you can be sure they are doing all right.

"The heifer calves which are needed to fill in the places of old cows can be handled with the steer calves until six or eight months, but by that time they should be separated and put with the cows, where they will do better, and it is just as well for them not to have much, if any, grain if you want to make breeders out of them. If the pasture is poor or burned out, it would of course pay to feed some grain."



A bunch of Bealor's calves the second summer

What You and I Should Know About Marketing Our Crops

By J. S. Cates

Illustrated by Lejaren à Hiller

I DO wish that farming were the self-contained business it used to be, and that the work of the farmer did not extend beyond the fields.

But it is not that kind of business any more. We have got to see what we produce, and sell it to good advantage, or the sheriff is going to sell our farms. We have abandoned the old system under which the farm was a home only, from which we sold the surplus product. The new order of things makes it a home and a factory combined, and calls for just as close study of markets as it does of laws of production in the field.

We are learning how to concentrate a large number of farms into one selling unit through co-operative selling societies, and I shall say more about that a little farther along.

The chief bugaboo of the farmer is the local buyer. I am aware that the local buyer has his place, but the trouble is that he so often functions where he should have no place. When I take a couple of chickens in one hand and a dozen eggs in the other, and run over to the village some night after supper to exchange these for sugar and coffee, I am glad that there is a local buyer available. The trouble is that I get the habit of selling to this man, and when I have several hundred chickens to sell at one time, or maybe when eggs are coming in at the rate of eight or ten dozen a day, I continue to take them to this local man. Yet my business is too big to be handled in this way. I can ship to the consuming center just as well as this local buyer can.

But often a farmer does not know to whom to ship. Sending things away by express, and having the money come back in the form of a check, is unusual to him, too. Aside from not knowing where to ship, he has not been used to this indirect method of doing business. When he deals with a man he prefers to look him in the eye. His experience, too, has in many cases educated him away from the shipping method, for at times he has got back a cock and bull story of vain excuses instead of the check he deserved.

We are now, however, taking steps to eliminate the dishonest commission man. Our bonded commission merchant laws—and many of the states have passed them—are making crooked dealing less frequent, if not impossible.

Your state market specialists are now in a position to give you names of honest commission men, and to tell you how you can put any of your products on the biggest market and put it there to the best advantage.

As showing the disadvantage of trusting always to the local buyer, a short time ago I encountered a case where a group of our best Illinois Corn Belt farmers, supposedly as rich in experience as any farmers of the nation, had lost two thirds the value of their hay crop through dealing with a local man. This section of Illinois produces a large amount of prairie hay, and the farmers were selling it as they had for years back, to a local buyer. He was paying them a little over \$10 a ton for this hay, selling it in turn himself on the Chicago market.

I followed several shipments of the hay through to Chicago. It brought there something over \$31 a ton. This local buyer was making this iniquitous profit simply and solely because these farmers had not posted themselves on Chicago hay prices, and had never concerned themselves much with the selling end of the hay game. Most of the farmers were selling in more than carload lots, and could just as well have shipped direct to the Chicago buyer as the local man could.

The local buyer not only often makes an iniquitous profit on his purchase from the farmer, but he also fails to purchase at any price many things the farmer can produce with great profit. If the farmer had the habit of dealing direct with the large central distributor, he would always find a market. I was told to-day by Leonard Kephart, the vetch-seed specialist of the Department of Agriculture, that he had encountered this past summer a number

of farmers who had raised vetch seed, only to find that there was no local market for the crop. He was able to put these men in touch with large central dealers who would buy any day in the year in any amount, and pay top market price.

Further to emphasize the importance of

and spraying, only to fall down when it came to the mysterious thing called marketing.

A year ago I was on a farm in Central North Carolina shortly after corn-harvest time. I found that this farmer had covered up 500 bushels of old corn with new. He said he did this because he could not

thousands of others, that he is not any longer tied hand and foot to the local buyer.

This list of cases could be extended to an almost unlimited number, all pointing to the fact that the farmer needs to know, first of all, how to reach the larger markets of the country, and how to be independent of the local buyer. It is information easy for him to acquire. He has but to ask his state market official, who is usually located with the college of agriculture or the state department of agriculture. If there is no market service furnished by the State, a letter addressed to the Bureau of Markets, U. S. Department of Agriculture, Washington, D. C., will bring the information.

After getting in touch with a larger market, the next thing to know is how to prepare produce in conformity with market demands.

Many shippers have had bitter disappointments because they have not known how to pack and grade, and have in many cases indulged in hard feelings toward the consignee, when in reality the fault was their own. All produce dealers have to buy according to grade. These grades follow closely certain specifications. A farmer may in good faith try to pack his produce according to these specifications, yet fall short in some essential particular. I found a group of farmers in the Shenandoah Valley shipping a grade of hay which they called "choice." When this hay reached the market it was graded down, and brought \$2 less a ton than was being paid for choice hay. The hay was full of briers, and the market will not take as choice, hay which contains briers. The farmer must be sure that what he understands by a grade is also what the market understands. About the only satisfactory way to learn about grades of any commodity is to visit the markets and make a study of the matter; or ask the man you ship to how he wants the stuff packed.

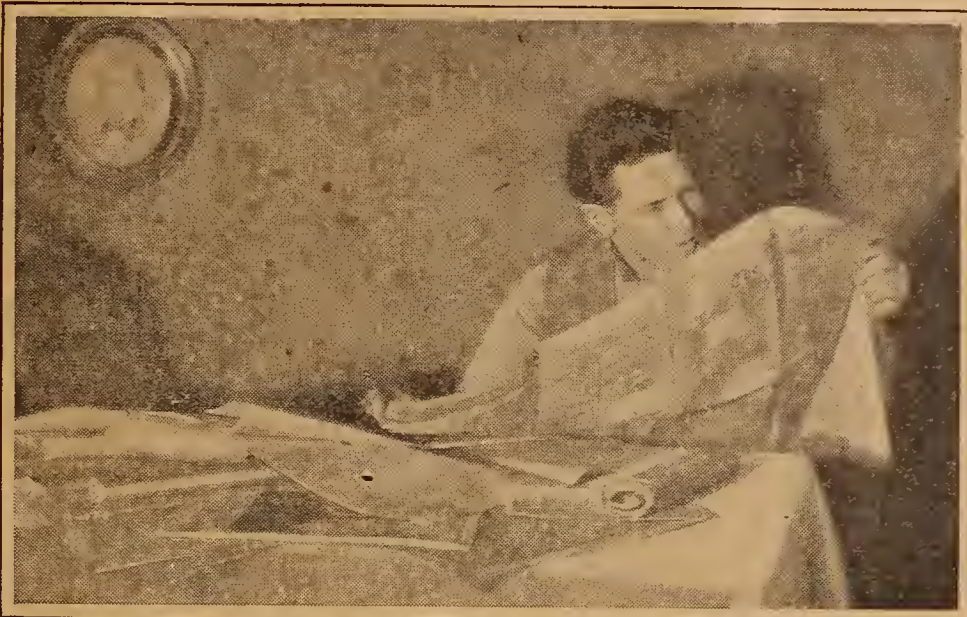
The matter of size and kind of pack is also a thing the shipper must be well informed about. In the case of hay, for instance, the different markets demand bales of different sizes and shapes. Some markets like a small bale, and some markets will take nothing but a large bale. In New York City, hay in large bales will bring \$2 more a ton than in small bales.

After getting the crop graded and in standard pack, you next need to know just how to load the cars. If the minimum load is not put on, the freight charge is excessive. If the load is not packed so that it will not rattle around during shipment, whatever damage is suffered is your loss.

Many shippers employ an expert to pack cars. An apple shipper tells me that he learned only by sad experience that it was unwise in packing apples in freight cars to have the heads of the barrels exposed at the side doors, where a hobo with a crow-bar could knock a head in and have the juicy fruit roll out at his feet.

The next thing the farmer needs to know about his market is something of what is being accomplished through co-operative marketing associations. Co-operative associations are, as a rule, not successful until a somewhat intensive industry has developed, but there are thousands of cases where there is sufficient production to justify handling the marketing problem in this way. I am firm in the belief that the final solution of the farm-to-market problem will lie in the greater and greater development of these co-operative selling associations. Here the volume of business is sufficient to justify the employment of trained men so that the product may be properly prepared and get to the proper market, and that fair play may be enforced.

There is much useless reselling of products. The farmer owes it to himself to make his first sale right to the central distributor, whenever this is possible. The time seems destined to come when farmers' associations will in large measure deal directly with consumers' associations. Until such time his task should be to sell over the heads of as many middlemen as possible. As agriculture is at present organized, the farmer needs to study his markets quite as much as he does the business of the fields.



The farmer needs to study his markets quite as much as he does the business of the fields

Six Points That May Help You to Market at Higher Prices

FIRST—Watch the city market prices on things you have to sell, and if you have any large quantity of it see if you can't sell to better advantage by shipping direct to a central market instead of selling to a local buyer.

Second—To learn the name of a reliable commission merchant at that central market, write and ask your state market commissioner or your state department of agriculture, or the Bureau of Markets, Department of Agriculture, Washington, D. C., and you will get the information.

Third—If your product must be packed or baled, ask your commission man to write you full details of how to grade and pack it so he can give you the most money for it.

Fourth—Go to the local banker or lawyer you have confidence in, and get him to tell you the safest and best way to conduct your financial dealings with the commission man at your central market.

Fifth—Find out from your railroad agent or your commission man the best and safest way to pack your product in the box car in which it is shipped.

Sixth—If possible, make a trip to your central market, get acquainted with your commission man, and have him show you how farm products are handled in the central markets, and why certain packing and grading is profitable to you.

selling direct to the big central distributors in the cities instead of selling to local buyers, I am going to give here a few more cases of how farmers have come out at the little end of the horn by not doing this:

Last year an orchardist down near Roanoke, Virginia, had five hundred and some odd barrels of first-grade apples. His neighbor orchardists sold in the field to local buyers for \$3.50 a barrel. This orchardist decided to look farther before selling. He got the addresses of the principal fruit buyers of the South, and wrote these men, stating the grade of his apples and varieties and asking prices. The result was that he sold his fruit for \$1,000 more than he would have got had he sold as his neighbors did. His careful selling added as much to the year's income as did the careful spraying and pruning of the trees. His neighbor orchardists had mastered the pruning



J. S. Cates, the man who wrote this article, and whose picture and pipe you see here, started life as a North Carolina farm boy. He knows his business, and has practiced in actual farming most of the things he suggests in his articles. The only time he ever deserted the farming business was from 1912 to 1914, when he served as editor of the "Southern Planter." What he says is reliable.

sell the old corn. The full story developed that he had tried to sell at his local mill, only to find that the miller, who was not a shipper, had a full stock. He tried one other man in the county with the same result, and then gave it up.

I found that this same farmer took both the Greensboro and the Raleigh dailies, and that corn in these two towns had been quoted steadily at 25 cents a bushel more than it had been bringing on the local market. Neither Greensboro nor Raleigh was fifty miles away. This farmer had not attempted to ship the corn, because he did not know to whom to ship, and shipping corn was something so new in his life that he had made no effort to find out. Of course, it would have been an easy matter to have found out. A letter of inquiry to his state market specialist at Raleigh would have brought the information by return mail. This farmer did not realize, just as is the case with

"Remove Hence to Yonder Place"

Wherein old Graham Llewellyn thought old Ebenezer Patrick had him licked, and would have admitted it, except for his son who rebelled

By William R. Lighton

Illustration by W. C. Dexter

THE chief justice of the Supreme Court of New Mexico cleared his throat with dignity, settled himself with dignity in his great carved chair, glanced around the chamber over the rim of his gold *pince-nez* to make sure that no incongruous circumstance would mar the fine dignity of the occasion. There was a solemn hush, an atmosphere of most becoming gravity. All set! As one whose words made or unmade the destinies of men, the chief justice began reading:

"In the matter of Graham Llewellyn, plaintiff in error, versus The Patrick Land and Cattle Company, defendant in error. Hearing on writ from Blankety County."

He read with impeccable decorum. No slipshod slurring in that man's methods of tongue or intellect. A fine legal mind, the bar of the State agreed; a mind whose forcefulness was matched only by its subtlety; the sort of mind which could take the longest and steepest climbs in an intricate argument without changing gears. The right man in the right place!

Old Graham Llewellyn, sitting with his lawyers before the august bench, wished profanely in the back of his head that the sedate chief justice would hurry—get a move on. Old Graham wasn't the least bit interested in the hair-splitting aspects of the case; he wanted to know how it was going to turn out at the end. Old Graham's mind was one which formed its conclusions first and did its reasoning afterward at its leisure. He wanted conclusions now—wanted them mightily. Naturally. The gist of a dozen or twenty words at the tail end of this meandering opinion meant financial life or death to him. The Patrick outfit, greedy to gain control of his wide area of grazing lands, had brought this suit upon some sort of a quitclaim under an ancient Spanish grant. The Patrick outfit had won in the lower court. If they won here they would take from him nearly a thousand acres of irrigated alfalfa land with the water supply, the key to his whole enterprise. His ranch held no other irritable land. If the Patricks got that thousand acres under the ditches he'd have to quit and let them have the rest of his holdings at their own price.

SO OLD Graham chafed as the chief justice balanced and juggled his bubbles of rhetoric. Fluff! By and by one of the lawyers laid his hand upon Graham's thick knee, giving it a squeeze. He had caught the first hint of the argument's drift. Graham could not yet make head or tail of it. He wondered if Ebenezer Patrick could, over there across the table. Patrick, portly, phlegmatic, gave no sign. Graham waited in cumulative impatience for the concluding words on the last page of the manuscript opinion. Only then did he understand:

"The contentions of the plaintiff in error are sustained. The decision of the lower court is reversed, and the cause returned with instruction. All the justices concurring."

Old Graham wanted to fling up his hat and yell. Two years of suspense had come to an end—a good end. But instead of yelling he got up quietly and went tip-toeing out of the chamber with his lawyers. Presently in the hall he encountered Ebenezer Patrick. In sudden excess of the friendliness of the victor he held out his big hand.

"What is it now?" he questioned. "Are we goin' to be neighbors, or—what?"

But Ebenezer's bulging greasy eyes did not light with friendliness. He was suffering the acutest of disappointments—the defeat of greed. He let his fat hands hang at his sides. His bad temper prompted an unwise speech:

"You go to hell! We'll get you yet."

Did you ever see the sky on a balmy day change swiftly to cold leaden gray under the first premonitory touch of a "norther"? A change quite like that came over old Graham. He spoke without heat:

"All right, Eb. You've said it. Now you go right on with your cat-killin'."

And so the matter stood between them.

Young Gordon Llewellyn, obedient to a riotously triumphant telegram from his father, met the old man at the railway with horses, to ride with him across the wide plains homeward, to exult with him in victory. They were great pals, those two. Not much alike though, save in particulars of physical heritage from sire to son. Only a generation apart in years, they were separated by all that generation had stood for in progress in the desert country of the Southwest.

Graham was of that lusty breed which seeks the outmost frontiers, where there is

And now, as they rode homeward together, in fine temper, old Graham was plotting in his mind the touch which would bring all this to a perfect consummation. He had been making ready for it for a long time, waiting only till the Patrick suit might be beaten and the last obstacle removed. Jealously, with difficulty, he was holding the words back till exactly the right moment would come. He had chosen the very scene and setting for what he would say.

They came to the spot at the end of the afternoon; a spot where the trail led over a round hillock with a commanding outlook. Off to the south lay the majestic desert, gray, ancient, with that air the old man loved—the air of passionate invitation to conquest; the air which had challenged and claimed the strongest qualities in him. Already the ineffable hues of evening were mingling with the shining gold of the broader day. At the far rim of the world lay the shadowy bulk of the purple mountains. The desert wind came sweet and clean out of the infinite distances. It was royal—royal! And at their other hand, nearer, within long rifle-shot, rose the great dome of Painted Mountain, gorgeous-tinted where the rocks showed through the black masses of the covering pine forest. Here and there over the precipitous southern wall, half filling the dark mouths of rough caverns, were remains of the rude masonry of the Cliff Dwellers, at home here in a long-forgotten time.



At last they reached the cliff's summit, and looked down over the plain

room for the unhampered use of its burly strength. Beginning with nothing in his youth, Graham had fought through all the hardy adventuring of the cattle business in the old days of the "longhorns", on the wild free range; days when, in the magnificent struggle for survival, men were pitted against men, and against gods and demons besides. That fight had made him what he was—a tough, doughty sort, with the indomitable quality of tried and proved strength. His work had laid a stanch foundation for his son to build upon.

And young Gordon had built as became him, not at all in his sire's rough-and-ready way but with orderly precision. It was he who had brought to the L-bar-L the finest of imported herd bulls for converting the old longhorn stock into real beef. It was he who had installed a modern irrigation system, and seeded the broad fields under ditch to alfalfa, as a safeguard against the fearful losses by starvation in the old hit-or-miss days. It was he who had brought the order of exact accounting out of the chaos of the old fashion of lumping off profit and loss at the year's end. In one methodical way and another he had changed the conduct of the ranch from a happy-go-lucky adventure into a business whose every particular was planned and calculated.

From the cliff's height, a ribbon of living silver against the somber background, a cataract fell sheer, three hundred feet, to the plain below, fed by the overflow of a high lake, giving life to the land beneath. In these belts of vivid green along the ditch channels lay the lands the Patrick outfit had tried to gain.

Old Graham drew rein at the crest of the hillock, lifting his hat, throwing back his shaggy head for the wind's cooling. He spoke suddenly, going to his point without preparatory word:

"Well, son, there it is! There's my whole life, right there in front of you! I've put into it all I've had and everything I've been. And now it's yours. I'm givin' it to you, clear and clean, from to-day. Go to it!"

Not much of a speech. Not a speech with the tension of high emotion. But young Gordon knew well enough what it meant. The eyes of the two men met and held in perfect understanding. And then somehow, subtly, indescribably, in that moment he had visioned so long, the old man's heart misgave him. It was something he had read in the young face before

another word was spoken. It needed a sublime sort of courage to let Gordon say what he must just then; but they had always been very downright with one another. Nothing less than downright would serve the need of this time.

"I can't take it," Gordon said simply. "It's not for me—not like this."

Maybe in some secret recess of his mind old Graham had conceived the possibility of that answer. He knew his son. For all that, the answer staggered him. It was as if the exquisite light and color of the day had been suddenly overcast with sodden gray. He hesitated for a long minute, taking a grip upon himself.

"What's the matter, boy?" he questioned. "It's a great proposition. You know that. I'm not quittin' because I've had enough. I love it. I've meant to go on workin' with you, same as before, only just lettin' you have your head and take the lead. It's due you. It's a proposition big enough for anybody."

He waited for a word that would give him something tangible for argument. When that word was delayed he went on a little haltingly:

"I've provided for your mother and the rest of 'em. That part's all right. I'd meant this to be yours. There ain't a better ranchin' layout in the State. Near thirty thousand acres deeded, and grazin' rights to twice as much besides. And the water. That's settled now, for good. I've smashed that Patrick bluff. They'll never get that opened up again. There's just nothin' at all left to bother you. You could go right ahead now, all smooth and serene."

"That's it!" Gordon said. "That's it! You've done exactly that—made it all smooth and serene. That's why I can't take it now and go on with it so. You've tamed it. You've fought the last fight—taken all the fight out of it. But I'm a fighter too. It's born in me. You know—not just scrapping, but something to fight for that's worth it; not the smooth and serene, but something I can put myself into for all I'm worth. Oh, you know!"

Yes, old Graham knew. Perhaps in his heart of hearts he would not have had it otherwise. Just the same, the sweet savor was gone out of his victory, the splendor was gone out of this day of days. While they rode the rest of the way, lamely but stubbornly he held to the argument with all he knew of the power of persuasion. But he knew he was beaten. At the home gate he drew rein again for the last word:

"All right, son, if that's the way you feel. I wouldn't wonder if you're correct. I've had mine, and I reckon you're entitled to yours. Lord knows it's a long sight different from the way I'd planned it; but Lord knows too I ain't the one to stand in your way. Go to it!"

SO, IN the world-old manner of zestful youth, young Gordon went out to find for himself what he wanted. Whether he picked up the trail leading to the heights of desire doesn't matter now. The point is that he left old Graham behind, solitary, to solace himself as he might by counting up the rewards the years had given him. There was mighty little comfort in that. For him the spoils of victory were meaningless save for the proud satisfaction of passing them on to others to enjoy. Through all his life he had looked forward to doing just that with his son. Now, that he was left to enjoy them for himself those spoils became not luscious fruits, but only bitter husks.

There was a year or so of that. Nothing but vanity and vexation! Matters went well enough, but there was no comfort in the well-being. Then, as if the Fates caught at his sardonic humor and flung it back to him in grimly meditated irony, all at once disaster fell.

Young Gordon, somewhere out beyond, had news of this in a letter from his father. The letter was blunt, rich in brusque elusions, fairly poverty-stricken in point of detail, but quite understandable:

"Well, son, I guess you picked right. You must have [CONTINUED ON PAGE 48]

Costly Ailments of Horses—And How You Can Prevent Them

By A. S. Alexander, M. D. C.

Professor of Veterinary Science, University of Wisconsin

MORE than ever before it now is a matter of the gravest importance to prevent your animals from suffering disease and injury, instead of having their ailments to treat. I shall try here to tell you some ways in which you can do this.

Veterinarians and animal pathologists everywhere are earnestly applying themselves to the solution of the various problems involved in this campaign against disease, and in recent years wonderful progress has been made.

No longer does the veterinarian merely cudgel his brains to find the proper drug to administer to his patient, or experiment, day by day, to discover new concoctions and combinations of drugs which, on the dose-of-snipe-shot principle, will be sure to hit something, and mayhap knock out the enemy himself. Now he is being employed to prevent disease, to keep animals healthy, and so has become a well-informed hygienist and sanitarian, and also is proficient in serum therapy.

For the practice of that science this man is equipped with various biologic products for detecting, preventing, or relieving diseases. To the use of such agents largely is due the lessening of glanders, farcy, influenza, strangles, and other infectious diseases which the trained veterinarian has to combat.

Did space allow, hundreds of ailments of animals might be listed as preventable, directly or indirectly, but to demonstrate the importance of this subject and indicate the possibilities of a campaign of disease prevention, it will suffice to mention some of those most commonly met with.

Fewer and better horses is the order of the day. Choice, heavy drafters are still most efficient for short-haul work, and are daily becoming more valuable. Indeed, they are scarce, hard to find, and dear to buy, and the foreign buyer is competing for those offered. How important, therefore, is it that not one of the capable horses we have shall be "sacrificed upon the altar of ignorance."

That was the case when thousands of horses were killed each year by azoturia in the cities, and many more lost in the country from similar carelessness and negligence. For azoturia is an easily preventable disease.

This fell disease and its hurtful associate, lymphangitis, or "Monday morning disease," are induced by continuing to give the ordinary ration of oats, or other rich feed, when bad weather or a holiday confines the horse to his stable.

Both diseases might absolutely be prevented, were it made the invariable rule that *no horse shall ever stand for a single day without work or adequate exercise*, and that *oats and other protein-rich feed shall be omitted or materially lessened in amount during all periods of idleness*.

That you may be able to recognize these diseases it may be stated that the urine is dark red-brown in color in azoturia, and the muscles of the loins, hips, and thighs become swollen, hard and paralyzed, so that the horse loses the power of his hind legs. Acute attacks often are fatal. All attacks lay the horse off work.

In lymphangitis a hind leg becomes acutely swollen, and so great is the pain in the region of the groin that high fever is caused, and the horse stops eating, sweats, breathes fast, and has a full, bounding pulse. The animal is "anchored" in his stall and unfitted for work for a period of one to two or three weeks.

Unnecessary suffering entailed upon the stricken horse and the heavy financial loss due to the terrible mortality from azoturia surely are matters of serious concern, but they do not complete the bill of loss.

Puncture of the sole by sharp objects, generally termed "nail prick," is another cause of temporary or permanent retirement of the horse from work, and many cases end in death from tetanus (lockjaw), which might be prevented.

In the recent world war it did not take the Allies and enemy long to discover that steel helmets, by protecting the head against shell splinters, shrapnel, and par-

tially spent bullets, would save many a life, and prevent thousands of troublesome wounds. But to this day few work horses have the soles of their feet protected against the ever-present and deadly nail. Why? Who can answer? Well, we fancy

But some nail-prick cases will occur, while stone bruises and corns are other common causes of lameness, and so the modern veterinarian must do all he can to prevent deadly lockjaw. To this end every horse that is known to have suffered



Sam Lodge and the Willows

I ONCE worked for Sam Lodge, an easy-going fellow of the Missouri River Valley. Sam had a fine farm, one of the best in the country, but he didn't take good care of it. There was one peculiar thing I noticed when I started plowing his bottom field—his cultivating land didn't run anyways near to his fence. The space in between was filled with willows—plain little red-barked willows.

At first I thought there must be ditches in the way, but when I looked the ground over I found no ditches, but plenty of old plow marks. So I asked about it next time I got a chance.

"Sam," I inquired, "what's the matter with that land between the field and the fence down on the bottom piece?"

"Nothing, I guess; why?"

"Well, I was just wondering why you don't cultivate it. Seems like a pretty big waste."

"Oh, no; it's no waste to speak of."

"You used to farm it, didn't you?"

"No-o," he hesitated. "I guess I farm just about where I always did."

"No, you don't, Sam!" his wife broke in. "You know I told you about that last year." She turned to me.

"When Sam and I were married that bottom field was farmed right up to the fence. I know, because we were different then, and wanted to be together a heap; so sometimes I'd sit in the shade of the fence and knit while Sam plowed. But after a while the willows began to creep in, and as Sam never was much of a fighter he began to draw back. So there it is!" And she poured her dish-water into the swill barrel and hurried back into the house.

"Oh, well! Gregory over here has willows in his field, and he makes big money farming. It doesn't amount to much." And Sam dismissed the subject with a careless fling of his hand.

"I'd rather lose the little bit of ground than to fret and stew over a thing like that," he added.

the explanation is chiefly one of negligence.

No horse should work without a thin plate of canvas-covered steel or a thick pad of leather between his shoes and the soles of his feet. Then, under these pads, should be a dressing of oakum and wool fat (lanolin). Time was when pine tar was used, but it is too strong, and always injurious in the long run. Wool fat, on the contrary, softens and encourages growth of the hoof. So shod, the hoof of the horse actually may improve instead of drying, contracting, and causing lameness.

I have often thought of Sam's field since, and how much it was like the ones so many of us cultivate. In our fields we are supposed to raise crops of good intentions, good ideas, and good deeds. Most of us get started pretty well, and have great plans of bigger and better crops year after year. But by and by the willows begin to creep in, habits and hobbies that we know, even if we won't acknowledge it, are stealing from our crops of usefulness, keeping us from broadening, making us narrow-minded.

At first we feel like we ought to root out the pests, and maybe we do dig up lots of them; but many of us get careless after a time, and the willows grow right back. Then we lose our ambition and quit really trying to broaden. And instead of digging to get rid of our willows we begin defending them. They don't hinder our crops, after all, we say. They're too small.

But once in a while we stop and smile grimly as we think of the foolish dreams of youth when we had ideas of broadening. We didn't know then how fast the willows would grow, nor how tired we would become after a time of just plowing and plowing ahead; and, more than that, we didn't know how pleasant it would be to lie in the shade of those willows and just watch them grow.

But right beside us there's a man who has broadened his field; and, strange to say, he seems still to have those foolish dreams of youth! And when we look at his field we see willows there too. Then we are sure it wasn't our willows at all that held us back—it was bad luck, and good luck put our neighbor ahead. But we haven't looked over all of our neighbor's property. Our eyes have been attracted to a little patch of willows instead of the size of the field, and we failed to see the side where the willows were kept down, and where the broadening was going on, month after month, year after year.

FRED L. LAWSON.



a nail puncture should immediately be given a protective hypodermic injection of tetanus antitoxin, and it is well to give similar preventive treatment in all wounds, in addition to the usual disinfectants.

Sore necks, backs, and shoulders annually cause the temporary retirement of many horses from work or make their work less efficient. Everything possible should be done to prevent such sores. Most of them are caused by ill-fitting harness, but even a properly fitting collar will cause sores, unless it is kept clean and smooth.

The draft of the tugs also must be properly adjusted on the same hames, and the swing of the wagon pole, or tongue, kept from hurting the horse.

The efficient "barn boss" will see to it that collars fit properly, are kept clean and smooth, and that the skin of the neck and shoulders is soothed and strengthened by bathing with salty cold water two or three times a day.

Barbed wire is another common cause of wounds, and such wounds also necessitate protective treatment with tetanus antitoxin. Usually it is a loose wire at the ground that does the harm, so that the fences should be examined at regular intervals to keep all wires in place and taut.

Better far would it be were barbed-wire fences done away with in pastures. Where a board fence is too expensive, 48 to 52 inch woven wire should be used, with two strands of barb wire over that to keep horses from pasturing over the fence.

It also is wise to carefully examine a strange stall before a horse is allowed to enter it. Depend upon it that if a projecting nail is there your horse will be sure to come in contact with it.

The navel of every foal should also be saturated with tincture of iodine at birth to prevent infection. Thousands of foals are killed each year by this preventable form of infection, and the joint diseases which occur as complications. Colts that survive are left with unsound joints.

The attendant, rather than the horse, usually is to blame when a case of colic occurs. The same man should always feed all of the horses, and each feed, so far as possible, should be given at exactly the same hour. Watering should be done with similar care and regularity.

Sudden changes of food commonly cause colic. The feeding of new hay or new oats without due preparation often proves disastrous. All changes of feed should be made gradually, and the horse should not immediately be fed when he comes in hot.

There would be far fewer cases of colic were the following plan adopted in the city and on the farm: Allow the horse a few swallows of cold water when he comes in hot and tired. Remove his harness, and bathe neck and shoulders with cold water containing a heaping teaspoonful of salt per pint. Allow him to eat a pound of good hay while cooling off; then allow drinking water, and then the feed of oats.

Do not allow drinking from the trough if the horse immediately goes to work, but let him drink now and then when at work.

The modern veterinarian no longer prescribes a hot bran mash to be given to a work horse on Saturday night. Such a feed is absolutely unnatural and a fertile cause of colic. It is better to mix bran with the oats for every work horse. It will lessen bolting of feed, induce more perfect mastication, help to regulate the bowels, and be a valuable nutrient.

Green grass suddenly allowed is also a common cause of indigestion, as is cut green grass that has been allowed to start heating before being fed.

It is not generally understood that a horse usually is suffering from indigestion when suddenly overcome by heat or killed by heat apoplexy when at work in the sun. Were the attendant to note the appearance and consistency of each horse's feces (manure) in the morning before harnessing many a horse could be saved from attack.

If the feces in any marked way is other than normal, the horse is unfit to work hard in the hot sun, and should be rested until well. The changes in feces indicative of deranged digestion are mushy, steaming, stinking condition, semi-liquid passages, clay-colored masses, or dark-colored, mucus-covered balls.

I mention here only a few of the common preventable troubles, which, if you manage by precaution to prevent, will save you much money. If any of my points are not clear to you, or if there is anything further you want to know about any of your stock, write to me, care of this magazine, enclosing stamped self-addressed envelope, and I will answer you.

The Letters Theodore Roosevelt Wrote to His Children

ON a hunting trip in the Far West in January, 1901, Roosevelt wrote to "Darling little Ethel":

"I have had great fun. Most of the trip neither you nor Mother nor Sister would enjoy; but you would, all of you, be immensely amused with the dogs. There are eleven all told, but really only eight do very much hunting. These eight are all scarred with the wounds they have received this very week in battling with the cougars and lynxes, and they are always threatening to fight one another; but they are as affectionate toward men—and especially toward me, as I pet them—as our own home dogs.

"At this moment a large hound and a small half-breed bulldog, both of them quite badly wounded this morning by a cougar, are shoving their noses into my lap to be petted, and humming defiance to one another. They are on excellent terms with the ranch cat and kittens.

"The three chief fighting dogs, who do not follow the trail, are the most affectionate of all, and, moreover, they climb trees! Yesterday we got a big lynx in the top of a piñon tree—a low-spreading kind of pine—about thirty feet tall. Turk, the bloodhound, followed him up, and after much sprawling actually got to the very top, within a couple of feet of him. Then, when the lynx was shot out of the tree, Turk, after a short scramble, took a header down through the branches, landing with a bounce on his back. Tony, one of the half-breed bulldogs, takes such headers on an average at least once for every animal we put up a tree. Get Mother to show you some of Gustave Doré's trees; the trees on these mountains look just like them. We have nice little horses which climb the most extraordinary places you can imagine."

Later, he wrote again:

"You would be much amused with the animals round the ranch. The most thoroughly independent and self-possessed of them is a large white pig which we have christened Maude. She goes everywhere at her own will; she picks up scraps from the dogs, who bay dismally at her, but know they have no right to kill her; and then she eats the green alfalfa hay from the two milch cows who live in the big corral with the horses. One of the dogs has just had a litter of puppies; you would love them, with their little wrinkled noses and squeaky voices."

Abernethy, the Wolf Hunter

On another trip in 1905, he wrote from Glenwood Springs, Colorado, to "Dear Ted":

"I do wish you could have been along on this trip. It has been great fun. In Oklahoma our party got, all told, seventeen

The Tyrant.



Chase of Offspring (led by daughter)

For he is a tyrant king!

The Colonel's idea of what his children's idea was of him

coyotes with the grayhounds. I was in at the death of eleven, the only ones started by the dogs with which I happened to be.

"In one run the three Easterners covered themselves with glory, as Dr. Lambert, Roly Fortescue, and I were the only ones who got through, excepting Abernethy, the wolf hunter. It happened because it was a nine-mile run, and all the cowboys rode their horses to a standstill in the first three or four miles, after which I came bounding along, like Kermit in the paper chase, and got to the end in time to see the really remarkable feat of Abernethy jumping on to the wolf, thrusting his gloved hand into its mouth, and mastering it then and there. He never used a knife or a rope in taking these wolves, seizing them by sheer quickness and address, and thrusting

his hand into the wolf's mouth in such a way that it lost all power to bite.

"On the third day out I got a fine big black bear, an old male who would not tree, but made what they call in Mississippi a walking bay with the dogs, fighting them all the time. The chase lasted nearly two hours, and was ended by a hard scramble up a canyon side; and I made a pretty good shot at him as he was walking off with the pack around him. He killed one dog, and crippled three that I think will recover, beside scratching others. My 30-40 Springfield worked to perfection on the bear.

"I suppose you are now in the thick of your studies, and will have but little time to rest after the examinations. I shall be back about the 18th, and then we can take up our tennis again."

Tom Quartz and Jack

WHITE HOUSE, January 6, 1903.

"DEAR KERMIT: Tom Quartz is certainly the cunningest kitten I have ever seen. He is always play-

boarding school. It is just after lunch, and Dulany is cutting my hair while I dictate this to Mr. Loeb. I left Mother lying on the sofa and reading aloud to Quentin, who, as usual, has hung himself over the back of the sofa in what I should personally regard as an exceedingly uncomfortable attitude to listen to literature. Archie we shall not see until this evening, when he will suddenly challenge me either to a race or a bear play, and if neither invitation is accepted will then propose that I tell a pig story or else read aloud from the Norse folk tales."

A Day With a Juggler

WHITE HOUSE, January 18, 1904.

"DEAR KERMIT: Today, after lunch, Mother took Ethel, Archie, and Quentin, each with a friend, to see some most wonderful juggling and sleight-of-hand tricks by Kellar. I went

along, and was as much interested as any of the children, though I had to come back to my work in the office before it was over. "At one period Ethel gave up her ring

How We Got Them

THE letters printed here were taken from Joseph Bucklin Bishop's recently published volume of "Theodore Roosevelt's Letters to His Children" (Charles Scribner's Sons, New York), and are only a few of the kindly, understanding, and delightfully entertaining letters Colonel Roosevelt wrote to Archie, Quentin, Kermit, and Theodore, junior, before, while, and after he was President. It was only shortly before his death that the Colonel told Mr. Bishop he would rather have these letters published, as showing his real self, than anything else he had ever done. They are filled with those touches of humor, love, wise counsel, vigor, and kindness that cannot but appeal to the heart of every human being.

THE EDITOR.

ing pranks on Jack, and I get very nervous lest Jack should grow too irritated. The other evening they were both in the library—Jack sleeping before the fire, Tom Quartz scampering about, an exceedingly playful little wild creature, which is about what he is. He would race across the floor, then jump upon the curtain or play with the tassel. Suddenly he spied Jack, and galloped up to him. Jack, looking exceedingly sullen and shamefaced, jumped out of the way and got upon the sofa, where Tom Quartz instantly jumped upon him again. Jack suddenly shifted to the other sofa, where Tom Quartz again went after him. Then Jack started for the door, while Tom made a rapid turn under the sofa and around the table, and just as Jack reached the door leaped on his hind quarters. Jack bounded forward and away, and the two went tandem out of the room, Jack not reappearing at all; and after about five minutes Tom Quartz stalked solemnly back.

"Another evening the next Speaker of the House, Mr. Cannon, an exceedingly solemn, elderly gentleman with chin whiskers, who certainly does not look to be of playful nature, came to call upon me. He is a great friend of mine, and we sat talking over what our policies for the session should be, until about eleven o'clock; and when he went away I accompanied him to the head of the stairs. He had gone about halfway down when Tom Quartz strolled by, his tail erect and very fluffy. He spied Mr. Cannon going down the stairs, jumped to the conclusion that he was a playmate escaping, and raced after him, suddenly grasping him by the leg the way he does Archie and Quentin when they play hide and seek with him; then, loosening his hold, he tore down ahead of Mr. Cannon, who eyed him with iron calm and not one particle of surprise.

"Ethel has reluctantly gone back to

for one of the tricks. It was mixed up with the rings of five other little girls, and then all six rings were apparently pounded up and put into a pistol and shot into a collection of boxes, where five of them were subsequently found, each tied around a rose. Ethel's, however, had disappeared, and he made believe that it had vanished, but at the end of the next trick a remarkable bottle, out of which many different liquids had been poured, suddenly developed a delightful white guinea pig, squirming and kicking and looking exactly like Admiral Dewey, with around its neck Ethel's ring, tied by a pink ribbon. Then it was wrapped in paper, handed to Ethel; and when Ethel opened it, behold, there was no guinea pig, but a bunch of roses with a ring."

Quentin's Snake Adventure

WHITE HOUSE, September 8, 1907.

"DEAREST ARCHIE: Before we left Oyster Bay, Quentin had collected two snakes. He lost one, which did not turn up again until an hour before departure, when he found it in one of the spare rooms. This one he left loose, and brought the other one to Washington, there being a variety of exciting adventures on the way.

"The first day home, Quentin was allowed not to go to school but to go about and renew all his friendships. Among other places he visited was Schmid's animal store, where he left his little snake. Schmid presented him with three snakes, simply to pass the day with—a large and beautiful and very friendly king snake and two little wee snakes. Quentin came hurrying back on his roller skates, and burst into the room to show me his treasures. I was discussing certain matters with the Attorney General at the time, and the

snakes were eagerly deposited in my lap. The king snake, although friendly with Quentin, had just been making a resolute effort to devour one of the smaller snakes.

"As Quentin and his menagerie were an interruption to my interview with the Department of Justice, I suggested that he go into the next room, where four Congressmen were drearily waiting until I should be at leisure. I thought that he and his snakes would possibly enliven their waiting time. He at once fell in with the suggestion, and rushed up to the Congressmen with the assurance that he would there find kindred spirits. They at first thought the snakes were wooden ones, and there was some perceptible recoil when they realized that they were alive. Then the king snake went up Quentin's sleeve—he was three or four feet long—and he hesitated to drag him back because his scales rendered that difficult. The last I saw of Quentin, one Congressman was gingerly helping him off with his jacket."

And here is one about John Burroughs, the famous naturalist, and the flying squirrels, written after Mr. Burroughs had been down South with President and Mrs. Roosevelt on a hunting trip:

WHITE HOUSE, May 10, 1908.

"DEAREST ARCHIE: Mother and I had great fun at Pine Knot. Mr. Burroughs, whom I call Oom John, was with us, and we greatly enjoyed having him. But one night he fell into disgrace! The flying squirrels that were there last Christmas had raised a brood, having built a large nest inside of the room in which you used to sleep, and in which John Burroughs slept. Of course, they held high carnival at night-time. Mother and I do not mind them at all, and indeed rather liked to hear them scrambling about, and then, as a sequel to a sudden frantic fight between two of them, hearing or seeing one little fellow come plump down to the floor and scuttle off again to the wall.

"But one night they waked up John Burroughs, and he spent a misguided hour hunting for the nest, and when he found it took it down and caught two of the young squirrels and put them in a basket. The next day, under Mother's direction, I took them out, getting my fingers somewhat bitten in the process, and loosed them in our room, where we had previously put back the nest. I do not think John Burroughs profited by his misconduct, because the squirrels were more active than ever that night, both in his room and ours."

Quentin and the Pig

WHITE HOUSE, October 17, 1908.

"DEAREST KERMIT: Quentin performed a characteristic feat yesterday. He heard that Schmid, the animal man, wanted a small pig, and decided that he would turn an honest penny by supplying the want. So out in the neighborhood of his school he



Roosevelt depicts an accident in one of his letters to his daughter Ethel

called on an elderly ducky who, he had seen, possessed little pigs, bought one, popped it into a bag, astutely dodged the school—having a well-founded distrust of how the boys would feel toward his passage with the pig—and took the car for home.

"By that time the pig had freed itself from the bag, and, as he explained, he journeyed in with a 'small, squealish pig' under his arm; but as the conductor was a friend of his he was not put off. He bought it for a dollar, and sold it to Schmid for a dollar and a quarter. Schmid then festooned it in red ribbons and sent it to parade the streets. I gather that Quentin led it around for part of the parade, but he was somewhat vague on this point, evidently being a little uncertain as to our approval."

How You and the Landlord Can Play Fair and Both Make Money

By T. J. Delohery

DEAN DAVENPORT of Illinois made the statement not long ago that nearly half the acreage of our better farm land in this country is owned by landlords and operated by tenants.

This is a bad condition. The man who works a farm ought to own it. But since that condition of affairs is not apt to be brought about in this country for many, many years—though I believe it is bound some time to come—the only thing to do is to work out the fairest arrangement we can between landlord and tenant.

If you are a renter or a landlord, you may be interested in the story of what I consider the best system of common-sense land-renting in the country. It is one in which the landlord and tenant share and share alike, both getting a square deal. The plan is that of William H. Firkie of Piatt County, Illinois, and his thirteen tenants. Firkie is a banker as well as a farmer. I have talked both to Firkie and his tenants, and I am going to tell you what they both said, and about the system they use, so that if your renting arrangement is unprofitable, you may be able to use these facts to change it.

I talked with Oscar Warren, who rents 320 acres from Firkie. Warren has a lease which ends only when he wants to quit. He is so satisfied with his arrangement that he would rather rent from Firkie than work his own farm in Ohio. The reason for this is the 50-50 agreement under which he operates.

After hearing what he had to say, I talked with Firkie, and learned the reason why the two men, as well as the other twelve tenants and Firkie, get along so well. "My success as a landlord," said Mr. Firkie, "is due to the fact that I share the profits and losses of my tenants. If they make a dollar, so do I; if they lose money, so do I, for I get no rent. I treat them as I would want to be treated, and consequently have no trouble with any of the men who rent my land."

"My leases, or terms, are based on common sense. There is nothing unusual about them—they protect me, and they protect the renter. I have no written contract—only the word of the men. If I cannot rely on their word I don't want them around. I trust them, and they trust me. My system has attracted the attention of many people, and I have received scores of letters asking me for information. I tell them what I have told you—my lease is no lease; it is merely a common-sense agreement."

"The agreement hinges on fertility, and the land, worth from \$300 an acre up, always produces the highest yields. A man wants to stay on a place of this kind; and all of my tenants stay until they want to quit, or until they get careless and let the barn doors come loose, and the noxious weeds grow. Then I think it would be time to have them quit. As yet I haven't had occasion to ask a man to leave any of my farms."

"This fertility question is the main thing in renting land. From what I have been able to learn it is one of the great problems of present-day farming. Experience proves that the life of the land is the cause of much trouble between the landlord and tenant. When a man has a lease for one year he has no incentive for spreading the manure on the land, because he may leave and not derive any benefit. My men utilize the manure, and they get the benefit too."

"I have never asked a tenant to do anything of which I am not sure. For instance, one tenant was not very strong on manuring the land. To show the benefits, we both planted some wheat—he on his farm, and I on mine. We drilled our wheat, but his ground was in better shape than mine, and up to the time of maturity his stand was far superior to mine. After planting I top-dressed my wheat with manure from a concrete feeding yard."

"At harvesting time I got 40 bushels per acre; he gathered less than 10 bushels to the acre. My land yielded me \$1,000 more than his did. That won him over, and now he is one of my best tenants."

Most of the tenants I talked with told

me that they have no incentive to keep up the fertility, because on a one-year lease, if he should have a bad year, he is asked to leave.

The owner says the tenant is lazy and wants all he can out of the land, regardless of the consequence. The renter counters with the claim that he rents the land to farm it, and cares nothing about the condition of the soil after he leaves the place.

I have been on all of Firkie's farms in

ability, if he is thrifty, and if he possesses a reasonable amount of common sense.

"Some of my tenants worked for me before they became tenants," said Firkie. "They proved themselves capable, energetic, showed good common sense, and I gave them land. I came to the conclusion that if they protected my interests while they worked by the month they would protect their own while farming for themselves, and by doing this they are also

This is William H. Firkie himself, and a silo scene on one of his thirteen common-sense-rental-plan farms. Firkie owns half the silage, and the tenant owns half. He's one of the few "fifty-fifty" landlords in the country. Too bad there aren't more like him! His farms are in Illinois, Ohio, and Michigan. He is also known as "The Goose King"



The Way to Get a Square Deal in a Round World

SOME jazz artist in Tin Pan Alley, New York City, once wrote a popular song entitled, "How Can Things Be on the Level When the World is Round?" We don't know how he proved or disproved this possibility, but there is one very simple, very effective way of insuring yourself honest treatment. It is this:

Be scrupulously fair to the other fellow, and take all possible precautions to determine whether he too is honest, before you deal with him. The land-renting story on this page pretty well proves the point. It shows that the real trouble is not so much the fact that landlords and renters exist, as that they transact their mutual business in the wrong way.

Renting a farm is bad or good in exactly the same degree that the individual who rents and the individual he rents from are shrewd enough to see that their mutual success depends on mutual fair dealing on an intelligent business basis.

It all sums itself down to the fact that if you pick the right man to do business with, in the first place, you won't be apt to have to pick a quarrel with him afterward.

THE EDITOR.

Illinois. I found no broken fences, no weeds, no hanging barn doors, or houses with loose boards; instead, I found barns with electric lights, well-painted houses, good, serviceable barns, and concrete floors in the barns and feeding lots. He has a silo on every farm, too.

There are a number of features about Firkie's methods of renting which are worthy of consideration. In the first place, he rents land that is worth up to \$450 an acre; and his tenants raise live stock on these farms profitably, disproving the theory that live stock cannot be profitably produced on high-priced land. In the second place, Firkie acts as a manager for his whole place. He does not bother the tenants, but gives close personal attention to all the farms, keeping in touch and in sympathy with his tenants. He offers suggestions whenever they are asked for.

He buys all the cattle, hogs, sheep, and geese fed on his land. In this way he does away with a variety of purchases, made by a variety of judgments as to the kind of live stock that should be fed. Also, he selects his tenants. He must know a man before he gives him land—know his habits,

helping me. My tenants are loyal, and loyalty is one feature that is rare in tenants. I make my decisions on the man himself. With the above things he must be capable, a good farmer, a hustler, and must be willing to follow instructions if necessary. If I find a man of this kind, money is a secondary consideration."

As we walked down the road from one of his farms, which is now rented by his son, we came across the son of W. H. Riggelman, a tenant. Riggelman is a native of Virginia, and had been working for the man of whom Firkie bought the farm two years ago. He told me how Riggelman had come to him after the deal had been closed, and asked to be given the farm. Firkie had the Virginian under his eye for some time, and put him in charge.

Mr. Riggelman had been farming for twenty years, mostly in the South, and had but \$800, plus a few husky sons. This sum won't go far in buying equipment, so Firkie, knowing that he was a good worker, staked him. By the time this is published the man will be out of debt and have a few thousand dollars of his own, for he has several loads of cattle and hogs to market,

besides some grain which will be sold. I noticed that some of his tenants had more land than others, and asked Firkie about it.

"The size of a farm I give a tenant," he replied, "is based on the man's capacity for work and his ability as a farmer. Some of my tenants have a half-section, while others only have 160 acres."

"I have found that it is much easier for me to rent a man a slice of land, and then increase it, than it is to rent him a big farm and be compelled to take some of it away because he is unable to handle it. This would reduce a man's self-confidence, and impair his ability."

"A good example of this can be had in the case of one tenant who worked for me for twenty years before he took over the half-section he now has. He used to have two men, but the draft took them. He couldn't get any help; but I didn't cut the size of his farm, because with the aid of his two small sons and his wife he did the work. It would have had a bad effect on him if I had taken some of that land. A man who will work as hard as he does is worth doing the right thing by. Such men are rare."

"Every one of my tenants works on a 50-50 basis—that is, I get half of all of the crops raised on the farm, and he gets the other half. The only rent that the tenant pays is \$8 an acre for pasture land. This land is his own, and we use none of it in our stock-feeding partnership."

"I have a patch of alfalfa near Riggelman's farm, and I am giving him half the crop for harvesting it. We cut some of it green, and the hogs and cattle he has on feed are eating it."

"To insure plenty of manure on the farm, I make it a point to have as much as possible of our products go to the market on two or four legs. We feed live stock and geese. If a tenant won't feed live stock I buy his crop for one year, feed it to cattle and hogs, right on his farm, and he is usually convinced."

"If, after feeding a batch of cattle, hogs, sheep, or geese, we have some grain, silage or hay left over, we either keep it until next year, or sell it at market price and divide the proceeds. If a tenant wants any grain or hay for his horses, cows, hogs, or chickens, or for seed, he buys it of our firm at market prices, and we split the total—in other words, he pays me half of the amount."

"Against the interest and taxes on my money the tenant puts his labor. When we market the stock we divide equally the difference between the cost and the proceeds on the market. If any of the stock dies, I stand the loss, the only thing the tenant loses is the feed."

"We feed lambs. I generally shear them before starting to feed. He gets half of the proceeds from the sale of the wool, just as he gets half of the proceeds from the sale of the mutton. We pasture our stock on stubble, meadow aftermath, and cornstalks—pasture which belongs to our partnership, since we each own half of the crops."

"Taxes on real estate are paid by me, the tenant paying half of the assessment on the live stock, and his own personal property tax. When we feed cattle we have hogs behind them, on the same arrangement as the other stock. If the tenant raises a few hogs, I buy them of him at market price."

"Any repairs on the farm that require skilled help I pay for; but if a fence is broken or a hinge off; the tenant does it himself. I build all new buildings, and at the present time am erecting a sheep barn for one tenant that will cost \$4,000."

"All of my tenants are my personal friends, but when we do business we leave friendship aside. I want my share, and he wants his."

I first met Firkie on the Chicago market, where he was with six loads of cattle and two loads of hogs which had been fed by Mr. Warren. The returns for the tenant for his crops and labor was something like \$11,000. Moreover, they had some grain left which was sold, bringing up his share to more than \$12,000.

Firkie has thirteen tenants in Illinois, Ohio, and Michigan. [CONTINUED ON PAGE 26]

Trees, Unlike Men, Can Be Made Young Again

By Joseph E. Wing



Here is an oak on Woodland Farm that took care of itself by beginning to branch out when it reached the proper height. Many oak trees, however, grow too tall, and die when they could be saved by careful topping

IF a man be old, shall he become young again? Maybe not. Philosophers have worried a lot over that problem, and men have made long and wearisome journeys, even as old DeSoto did, seeking the Fount of Eternal Youth.

Now, physiologists seem agreed that men, and animals, get old because the individual cells that compose the body grow old, and when they are old they are old, and that seems near to the end of it.

But if a plant or tree becomes old, shall it not be made young again? And the answer to that is, yes, easily enough, in a very great number of instances, if not in all.

A tree or a plant is not very much like a living animal. A tree is indeed almost exactly like a colony of men. Each tiny twig, each bud, is a living thing; each one is young, each one would be vigorous if it could be well nourished.

How old, think you, is that apple tree of yours? Away back in old England, centuries ago, before the day of William the Conqueror, that apple tree was born. It came up from seed in some old English garden. It bore good fruit. The parent tree grew old, then scions of new, lively wood were taken and set on young roots, and, behold! new trees sprang up, but they were yet a part of the old trees of the garden.

From these came yet other trees, and from the tree you cherish, yet never has the life died that came into being when that seed sprouted in the old English garden one thousand years ago. So it is evident that there is not much similarity between plant and animal life.

It would be rather fine—would it not?—if scions of our good and great men could be lopped off now and then and grafted on little sprouts set in garden array! But we can't do that yet, and we lose every great man as soon as he dies, for his children are really hybrids, having only half his blood, and presenting every sort of variation that pertains to hybrids.

The tree, though, is like a colony of men sent to a new land, and having a wagon road and wagon train connecting it with the motherland. Imagine each colonist pushing each year a little farther into the wilderness, sending back through the wagon train his spoils of conquest, receiving in turn his supplies from the homeland, but ever restless, pushing farther and farther inland, and, unlike most colonists, leaving the region behind him used up and deserted.

Don't you see that each year the connection between the young and lively colonists gets longer and longer, and the supplies harder and harder to receive? What avails the youth and vigor of the colonists if they, absolutely dependent upon the old home and the wagon way, finally get so far from their base of supplies that they are half starved?

The tree, then, gets old because each tiny bud (a young thing), as it expands and grows, reaches up for more light and air. It seeks to get clear above its fellows. It prevents, by shading, the development of other buds beneath it. Thus steadily the tree grows in height, and steadily it gets farther and farther from the roots that feed it.

There is a limit in each tree beyond which the sap cannot rise. Below that limit there is a limit to really vigorous growth. After a time the top of a tree is so far from the earth that the sap almost dries up before it can reach the leaves.

And, curiously enough, the sap seems to rise as high as possible, to pass by well-situated lower branches and seek to reach the higher ones. Thus the topmost boughs rob the lower ones first of light, then of sap. At last the tree begins to die. If it

is an oak, it begins to die at the top first, then by slow spreading the death progresses.

There is also another thing happening: While the top is reaching up, the roots are extending farther and farther from the trunk. After a time the roots of an old oak will reach out for a hundred feet, but near the tree there will be no feeding roots at all.

I have often set shrubs and creepers close to the trunks of old oaks, and found that they thrived, had an abundance of moisture, while fifty feet away the earth was dried out by their feeding roots.

Old trees can be made young if they have branches near enough to the ground to make a new top.

It is not safe to cut them back below the

height, he may often make it quite young again; and no doubt prolong its life for a century or more, by quite heroic surgery.

Getting above some vigorous branches let him cut the trunk squarely off. Over the end he must put a cap of some sort to protect from decay. This may well be of cement, rounding it over and letting it come down two inches on each side. This will effectually prevent decay of the trunk.

Now dig a circular trench about the tree, cutting off each root discovered, no matter how large it may be. Make the trench about twenty or thirty feet from the body of the tree. Fill it in, putting in good soil if you need it.

What will happen then will be that new feeding roots will start out at the same time

This is "Doomsday Oak," the wonderful oak tree at Berkley, England. It is 1,400 years old, which makes it date back to the fifth century, or 500 years after Christ was born. The tree of corresponding fame in this country is the "Charter Oak," at Hartford, Connecticut. "Doomsday Oak" is now said to be dying. It could have been saved if the branches in its trunk had been healed with concrete a couple of hundred years ago



Here are a couple of oaks that will begin to die soon if they are not topped and taken care of. This and the other pictures on this page were all taken by Joe Wing—some of them on Woodland Farm, some in other parts of the world



These may appear at first glance to be worthless old stumps of ruined trees. As a matter of fact, they are the famous pollard oaks of France, which sprout on the tops and sides and are trimmed every eight years, the branches being used for firewood, which is very scarce in that country



And this is a companion oak to the two that need topping. This one has been carefully topped, and is growing vigorously due to the fact that it was properly cared for



lower branches, because before any adventitious buds could start, and a new top grow, the tree would be dead. But half or more of the top of an old oak that has grown in forest condition with too long a body can be cut away, and only good will usually result. It will look pretty ragged for a few years, but ultimately will gain a new top, more wide-spreading, more rounded and beautiful, than the one that it has lost.

Sometimes, when it has no very high central stem, the tree may be renewed by cutting back the upper branches. You can climb out on them as far as you dare and cut off their outer ends. Under no circumstances should you cut the inner branches, because they are rightly placed to renew the tree.

When one has a fine old oak in his lawn, in danger of dying because of its age and

that a new top is forming, and you will have practically a new tree, very much as though it had been freshly transplanted. If the circle inside the trench can be mulched, or cultivated to keep down grass, all the better. The diameter of the circle must of course depend upon the size of the tree and the amount of top left on it.

Sometimes a circle as small as thirty feet in diameter will be large enough for even a good-sized tree, after a very severe pruning. In truth, it is dangerous to leave too great a root extend after the top has been severely cut back. There must be a safe balance.

There are many old trees in lawns that are very highly prized, and that could not be replaced, were they to die, with any amount of money. Most of these trees can be saved by this method of cutting back.

In England old trees are thus renewed, and have been for a very long time. The



This oak tree on the Wing farm at Mechanicsburg, Ohio, was broken by a tornado more than twenty-five years ago. It was saved by careful branch-trimming and root treatment. The system is very simple once you understand it

writer has stood under the boughs of the Doomsday Oak, a tree that must be at least fourteen hundred years old. It has been kept alive by this heroic amputation, but at last it seems doomed to dissolution. Had its old scars been filled with cement it might possibly have been good for another thousand years. Its buds and twigs are young yet, as on the youngest oak seedling.

How Joe Wing Saved the Trees on His Own Farm

JOE WING was the kind of man who never asked others to do what he wasn't willing to do himself. He practiced what he preached. I was talking to Trell Yocum about this tree story just before we put it in the magazine, and he told me that Wing saved many of the beautiful trees on his farm by the very methods he outlines here.

"During the summers that I used to work on Woodland Farm," said Yocum, "there was often too much dew in the hayfields early in the morning to do any work, and I put in my time doing odd jobs around the place. The making of concrete fence posts took up the majority of my time on such mornings, and on rainy days. However, on several occasions I mixed concrete which was used to cap the crowns of oak trees which had started to decay. The tops had been headed out and the decayed portion cut away before I started my part of the work.

"My first task was to get a piece of tin, which I nailed around the crown of the tree. As a rule, the tin would project about five or six inches above the crown of the tree. Then I mixed the concrete, two parts sand and one part Portland cement, and with the aid of a helper carried it to the top and poured it inside the circular piece of tin onto the crown of the tree.

"It was rather a slow and laborious process to carry this mixture of sand and cement in a galvanized bucket to the top of the tree, but it was well worth while. Later the tin was removed, and the gray, concrete cap was hardly noticeable. Many of the beautiful ancient oak trees were thus saved, for the decay was arrested in sufficient time. Valued as timber, these trees were probably worth but a few dollars apiece, yet from the standpoint of beauty and attractiveness which was lent to the entire woodland surrounding Joe Wing's home they were worth thousands of dollars."

THE EDITOR.

Roadside Planting Law

IN ORDER to encourage roadside beautifying, the Michigan Legislature has passed a law which makes it the duty of the State Highway Commission and the State Commission of Agriculture to look after the setting out of shade and nut-bearing trees, and authorizes the State Agricultural College and Public Domain Commission to distribute nursery stock at nominal cost to individuals and public officials who will set it out. Trees are to be planted at intervals of 20 to 40 feet along roadsides, and injuring or affixing signs or notices will be a misdemeanor punishable by fine or imprisonment, or both. This should do a great deal to beautify Michigan roadsides, and other States would do well to follow suit. European countries have been lining their highways with trees for centuries, and have found not only a sentimental value in this work, but an economic one as well. There is nothing that so pleases the traveler as a roadside shaded with friendly trees.

A Side Line of Fruit—How You Can Make It Pay on Your Farm

By Frank A. Waugh

MY FATHER'S letterheads used to read "Stock and Dairy Farm," yet there was a good orchard and a nursery on the place from which the family harvested much comfort and some revenue. On that stock and dairy farm, in the very unhorticultural State of Kansas, there was in fact enough fruit-growing and tree culture to give me the best of my education in the horticultural field, and to form those tastes which have led me thus far through life.

Every man, as a matter of course, is prejudiced by his own experiences, and these boyhood observations of mine have long ago settled my opinion in favor of fruit-growing as a side line with grain or cattle farming.

That old home farm was about as poorly situated for the fruit-growing game as any piece of tillable land could very well be. It was high and dry, and exposed to remorseless winds; it was newly broken out of the Buffalo grass and bluestem; it had no real market outlet; and in those days there were no varieties known to be adapted to the prairies.

Farmers were planting Rhode Island Greening, Rambo, and McAfee's Nonsuch. Yet one of the first things my father did when he settled there on the Kansas frontier was to put out an orchard, and that orchard in due time bore reasonable crops of usable fruit. Judged by the standards of the modern wholesale markets, or the present-day fruit shows the product was poor enough; but judged by human standards and the needs of the time the yields were good.

And while I am indulging in these reminiscences I will mention another case of the same time and country which much impressed me. Ed Laverty owned a quarter-section "cornering" on ours. One time an oily nursery agent sold Ed 500 apple trees, and Ed planted them on about six acres of his flat raw prairie, and promptly turned his attention to growing wheat on the rest of the farm.

About seven years later Ed gave up the farm and went to work for the railroad, renting the place for a promised cash sum to one of the Blackman boys. That meant wheat, of course. No renter out for quick returns could grow anything else. But that year the late-sown wheat was an ignominious failure. Everything happened to it except that it didn't make straw, and it didn't form heads and the grain didn't fill. It wasn't worth cutting. It looked as though the Blackman boys had lost their year's work and Ed Laverty his rent.

But about threshing time, when the Blackman boys had nothing to thresh, they suddenly discovered that those apple trees, hidden by taller growing sunflowers, were loaded with apples. This fruit they gathered into their empty wagons and peddled quickly to the fruit-hungry neighbors, securing a larger return than any quarter-section of wheat had yielded in that county that year. And I have always hoped that they paid Ed Laverty his rent.

THIS recital has two advantages: it is literal truth from my own experiences; and it demonstrates a principle you may be able to apply to your own farm. For if a flyer in fruit will do as much as this under circumstances so adverse, it is not too much to say that under favorable conditions a small orchard makes a strong combination with other money crops.

Indeed, the whole trend in the fruit-planting world of America—subject to reasonable exceptions—is now in this direction. A decade ago the tide was running to big orchards—thousands of acres—corporation organization, sales of "units" to stockholders, and all that sort of thing. Yet to-day it is plainer than ever before in the history of America that there is a large safe place too for the small orchard on the ordinary farm.

In any part of the country where fruit trees will grow there is an opportunity to go into the business in a small way. Perhaps the chances of financial success may be counted better in those districts outside the famous fruit belts than inside. Of course, a man can grow a small orchard

of peaches successively at Fort Valley, Georgia, or a school teacher might do well with five acres of apples at Wenatchee, Washington, but, as a rule, small quantities of these fruits will meet a better sale in sections which import peaches and apples.

One condition, however, ought to be made: Unless a farmer can give his orchard reasonable care, following modern methods, he should never plant a tree. The time has gone by when wormy windfalls have a place in the markets. The general farmer cannot take all the minute care of his trees which the specialist gives; neither can he allow them to take care of themselves.

The time when, as Professor Roberts

over the United States for a locality where peaches will grow to perfection; but the small grower looks in his home orchard, sees that he can expect a pretty fair crop of Waddells, Greensboros, and Elbertas, knows what peaches are being brought into his home town every year from the city distributors, and here he sees his chance.

OF COURSE, he makes mistakes after that, but they need not be serious. For one thing, he is too apt to copy the specialist. Or he reads the directions in the magazines, or he reads my books, nearly all of this stuff being written from the standpoint of the specialist. To be sure, he must learn from the man who is in the big fruit-

The Average High-Brow is Just One Grand Bluff



This is Mr. Waugh

You can pretty nearly count on it that the man who tries to dazzle you with big words and a superior manner hasn't really got the goods—he's bluffing. The greater a man really is, the simpler his language and the plainer his ways.

FRANK A. WAUGH has at some time been neighbor to practically every farmer in the United States. He was born in Wisconsin, moved to Kansas, later to Oklahoma, then to Vermont, still later to Massachusetts.

When he returned from service as an army captain in the late war, he resumed his work as head of the Division of Horticulture and professor of Landscape Gardening at Amherst.

We like him because he speaks our language and he talks sense. You can understand every word he says, and he always says something we average folks can take hold of and use, in spite of the fact that he has written more than a dozen books on horticulture, and also has had other temptations to become a high-brow, with no word in his vocabulary less than a foot and a half long.

THE EDITOR.

used to say, a farmer could go out into the hill pasture in the fall and "discover" a crop of apples was a good long while ago. Nowadays the San José scale, the tent caterpillar, the coddling moth, and the railroad worm discover the crop first.

Perhaps we may assume that every respectable farmer will maintain a family orchard. He will want the members of his own household to enjoy good apples, peaches, plums, and the other natural fruits of the soil without buying them in cans. Taking such a home orchard as a basis for our plans we can quite easily expand to the point where this orchard becomes a productive unit in the whole farm economy, appearing on the annual balance sheet with an acceptable addition to the yearly income.

At the very outset the family orchard will have settled two of the most serious questions confronting the commercial fruit producer. The first is, what kinds of fruit can be successively grown on this soil and in this climate? The second is, what kinds and quantities will the local market absorb? The answer to the former question should be final; the answer to the latter will be sufficient, especially if the farmer has the business instinct to sense a market. The mixed farmer must be something of a trader; must therefore be familiar with his market; must know how to sell small quantities of eggs, fruit, potatoes, home-made cheese, white beans, pork on the hoof, dried sage, apple butter, cider vinegar, and seed corn to advantage. I have known farmers who "would rather starve than be caught peddling on the streets," and who called it peddling to sell anything less than a carload of steers. General mixed farming is out of the question for such as they.

The plunger in peaches has to search all

growing game; but first of all he must learn to interpret and discount the big grower's methods.

This need arises first with respect to varieties. The requirements which the big grower has to meet for fruit shipped in quantities to distant markets are by no means the same as the tests applied to fruit in the little home town. You can grow a wider range of varieties; often you can grow sorts of better quality. Take grapes as an illustration: Concord and its counterpart, Worden, are the principal sorts in the wholesale markets; but the local grower can often handle Brighton, Delaware, Niagara, and two dozen other choice kinds for his personal friends and "paying guests."

It might be put down as a working principle, therefore, that the farm fruit grower will choose a larger list of varieties, will pay more attention to quality, and more attention, too, to fine points of local adaptation. Then, instead of confining himself to apples or pears, he will grow also some peaches, plums, quinces, grapes, and bush fruits.

SUCH a fruit garden will run somewhere from one to ten acres, and may comprise from one hundredth to one tenth of the working area of the farm. Probably the determining factor will be found in how much you can sell to the local market. Feel out the customers, and let the fruit-growing department of the farm expand slowly as long as fruit production proves to be profitable. Whenever the business, or any part of the business, fails to show further returns, the game stops right there.

In the selection of soil the general farmer naturally cannot go all over the State to locate a new farm, especially adapted to

the culture of fruits; but he does not need to select the worst spot on his farm for his orchard. It does sometimes seem as though the home orchard had been placed on the corner which simply wasn't fit for anything else.

The usual rule is that the orchard should go on high or sloping land, and such as has perfect subdrainage. It should never be at the bottom of the slope, in the valley, or in a "pocket." There are minor, almost negligible, exceptions to the rule—for example, in the dry sections of Iowa and Nebraska, where the fertile, moist protected little gulches often make the very best spots for small orchards. Outside these unusual conditions the rule is safe and sound. And as for soil, any field that will grow any other agricultural crop will grow fruit of some kind if it is only well drained and thoroughly tilled.

Thorough tillage is one of the absolute essentials in the farm orchard. Some of the high-brows and big fruit growers, I am aware, are still discussing whether some sort of "sod culture" (a contradiction in terms) may not be just as good. Meanwhile, an examination of all the farms in the Northeastern States, from Maine to Michigan, and as far south as Virginia, will show that the farmer's interpretation of sod culture is always fatal to an orchard. There may be men who can succeed by the "mulch method." I think there are. An expert can do almost anything if he works at it long enough. But you as a general farmer, running an orchard as one item in a complex enterprise, will make your motto "safety first." And safety for you lies in cultivating your orchard as well as you would your corn or potatoes, or better.

This modern tillage system includes the cover crop as an almost indispensable item, and cover-cropping is a practice which comes hard to the average farmer. There is nothing quite like it in general farming, though green manuring—not widely practiced—would be a fair parallel. On this subject of cover crops the side-line fruit grower can well afford to read the books and the bulletins, and try out their recommendation with care.

IN YOUNG plantations of fruit trees, intercropping with corn, potatoes, beets, squash, or other truck crops will often serve several of the purposes of the cover crop. Yet even with corn it would be well to sow in rye or vetch for the winter cover, to help hold the soil, and to add that much more humus to the land at next spring's plowing.

With the growing of truck crops it is easier to add fertilizer, and the general farmer is prone to starve his fruit trees. Of course, this general farmer ought to have a fair allowance of live stock, and that will enable him to give his trees a ration of barnyard manure. Barnyard manure is not a balanced ration nor an ideal food for fruit trees, but up to a certain point it can't be beaten. It is one of the things we sadly miss on our big specialty fruit farms. It is particularly good on young trees; it adds the humus so easily depleted in cultivation, and it assists materially in the drainage and in keeping the soil in proper physical condition.

Insects and diseases are inseparable from the fruit-growing game, whether you grow two trees or two hundred thousand. I am sure that more general farmers give up the job on this account than for all other reasons combined. Spraying—thorough spraying, at the right time, with the right solutions, and in just the right way—will check most of these pests. Not all. Still, in the main, the man who has mastered the difficult art of spraying stands a good chance. Only the practice is intricate and the work unpleasant, and it mostly comes at a time of the year when the general farmer wants to do something else.

It is necessary to have a good spray outfit, and to use it early, often, thoroughly, and intelligently. Here again the small grower must learn—but only practical, essential points, not refinements—from the specialist, must translate these advanced methods into the terms of his own problem, and must not shrink from a good investment. For it [CONTINUED ON PAGE 56]

Has a Poor Man Got a Chance? Well, Read What This One Did

By E. Gregory

SOME people say that the poor man has no chance to better his condition; but we do see them coming to the front, getting ahead financially, socially and otherwise. Here is the story of one such: W. H. Swinda, one of my neighbors, out here near Washington, Indiana, began life as a farmhand. He saved his money, and soon began farming for himself, on rented land. His first team was not very good, just the commonest sort of plugs. Team, harness, wagon, and plow worth about \$180 at that time.

With this outfit and a little less than \$100 cash Swinda began on the job that has made him well-to-do. The beginning of the second year saw him with a little more money in his pocket, with some good tools paid for, plenty of feeds to run him another year, a colt and a cow, and no debts to speak of.

A little incident at this point shows one of the characteristics of the man which helped him to succeed. He never lost his head. At this time many of his friends advised him to buy a better team, since he was able to do so by going in debt only a little more. But he refused, and kept his plugs two years longer, until he had several hundred dollars ahead. This trait is a part of the man. It crops out at every whipstick. He wasn't afraid to go in debt; and often he did get in pretty deep; but he never would buy anything until he had some money at hand to pay down, some more for emergencies, and other things arranged so that he could see the way clear.

He managed to get along with the old

plug team until he was able to buy a good team. Then, and always thereafter, he bought the very best. He has come to be



Here you see W. H. Swinda, who started with less than \$100 worth of farm equipment twenty years ago, putting the finishing touches on his \$5,000 bungalow. He has \$42,000 worth of farm property and cash, all of which he has made out of farming. And he doesn't owe a cent. He started as a farmhand, became a renter, then an owner. This article tells how he went about it

known far and near for the good stock that he keeps, especially horses and mules.

Swinda is one of our pioneer pure-bred stock men. I think he was one of the very first to have pure-bred registered mares in this neighborhood.

Swinda continued to rent for years and years, until he was able to buy land. Then he bought good land, the very best in the country, and 40 acres of it. Then he had it honeycombed with tile. Then he built a good house and barn, with modern improvements all round. He considered 40 acres of good land with a comfortable house and good barn a larger asset than a large farm of poor land and an uncomfortable home. This 40 acres was a home, and room for some stock. Here this thoroughbred farmer lived and prospered for several years, tending his little home place and renting ground from his neighbors.

The next move was to sell the home place, which in the meantime had grown to 90 acres, for \$23,600. A bad move, eh? It would be for you or me, probably for most people, but a good move for Swinda. Because, with the money he got for this place and with some that he had saved, he bought 200 acres for \$175 an acre. It's worth the money, too, and will soon be worth twice as much. The Swinda touch will soon make it double in value. Besides this \$35,000 farm, Mr. Swinda has five acres adjoining the town of Elora, worth \$500 an acre, where he has built a thoroughly modern brick veneer bungalow at a cost of \$5,000. He has no indebtedness now, some little money and Liberty bonds

for a rainy day. And twenty years ago this man was working as farmhand for \$1 a day.

Don't be afraid to go in debt, but don't buy too soon, and don't get in too deep. When you do buy, buy something that's worth the money. Then, if you love to work and work hard, you're sure to succeed. At least this is Swinda's medicine. And he made every dollar he owns at farming, and in about twenty years, starting with less than \$100 investment.

A Home-Made Trailer

MY TRAILER was made out of an old-fashioned surrey. It was worn very little, and stands up under any work like a new rig. I shortened the pole to six feet, and had my blacksmith make a coupling for the end, and another one that fits around the rear axle of the light car which pulls it.

The surrey didn't cost me anything, and the blacksmith's work cost 50 cents. When I load a pig, I place the loader on the rear of the trailer in which I have a hog box, and we are soon on our way.

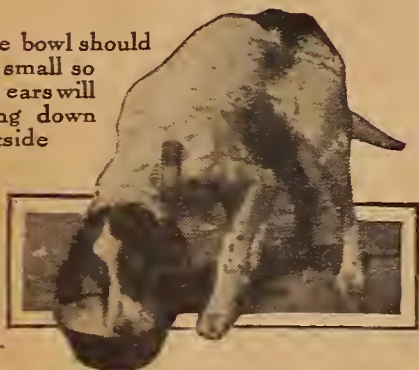
I drive about 18 miles an hour, but take the corners pretty slow. It does not seem to require much extra power.

Of course, a trailer with rubber tires, bumpers, and so on would be still better; but this serves very well, and will keep on going until I am ready to buy a truck, or a better trailer built especially for the work. EARL ROGERS, Ohio.

Ways to Keep Your Dog Well and Train Him Right

By Warren H. Miller

The bowl should be small so his ears will hang down outside



LAST month I told about different kinds of dogs and their qualities, pointing out that it is only the mongrel and the cross-breed that makes sheep killers. This time I want to tell you how to keep a good dog well, and how to train him up properly from puppyhood.

A good healthy dog should have no more diseases than a well-cared-for horse. Worms are usually present in puppies when you get them, and a teaspoonful of syrup of buckthorn once a week will rid him of them. Watch his feces when you take him for his walks, as they are a certain indication of his general health. If too tight, add more vegetable table scraps; if too loose, he is getting improper food, and you need more biscuit and should cut out the vegetables for a while.

If you note white, squirming segments it is a sign of tapeworm. Get five cents' worth of pumpkin seed, pound up in a mortar, and boil for half an hour, and mix the resulting seedy pulp with his food, when it will be gobbled up as a matter of course, and will generally kill the tapeworm.

If the segments still persist, treat him with powdered areca nut, one grain to each pound weight of the dog. It is a violent poison, so the dog is first fasted twenty-four hours, and then given the dose with his food, and within two hours followed up with a tablespoonful of castor oil to clear him out, or you will poison the pup as well as the worm. It should not be given to any pup under eight months.

Fleas are a pest which will make a dog miserable all summer. A bath in a tub of water, with about a tablespoonful of creolin

dissolved in it, will kill millions of fleas, and if repeated twice in a summer will be enough. Eczema frequently attacks pups, and is the result of bad feeding. It shows up with continuous scratching behind the ears and under the armpits, which soon become red and sore. The diet I have given above will guard him against it. Also treat his coat with a half-and-half mixture of crude oil and flowers of sulphur.

Distemper is the great dreaded disease of dogdom. It is very like typhoid in a human, and comes from his smelling posts and trees that have been patronized by dogs who have had it. Never take your pup to town if you can help it, particularly in April, May, and June. If, however, he gets it, it will make its appearance with a high fever and a running nose, or, if it is of the intestinal type, there will be yellow pustules on his stomach and inside his thighs.

The time to act is immediately, for if it gets a four days' head start the pup is gone. Make a warm flannel coat for his chest and back, and keep him outdoors in his kennel, unless the weather is cold and inclement. Shoot a dose of anti-distemper serum under the skin inside his thighs with a hypodermic needle, and feed him nothing but meat broth and beef, iron, and wine. Your aim will be to keep up his strength, while he fights the disease almost unaided, for no really good distemper serum has yet been discovered. Distemper runs its course in fourteen days.

Keep down the fever with child-size doses of sweet spirits of niter, and feed him by pouring the broth down a funnel made by pulling open his cheek while holding his mouth closed, for few dogs will or can eat during distemper, and must be fed forcibly. The rest is hope and careful nursing, followed by the utmost care during convalescence lest he catch cold, for most dogs die of gangrene of the lungs after the distemper has gone. I usually have my pups shot with a dose of the serum in April, and keep them close at home until June, when the danger is much less.

The training of your dog hinges on just two accomplishments—to stop and lie down at command, and to walk quietly by your side when ordered to. Every dog should be taught these two fundamentals.

The basis of all training is affection. The dog naturally loves you, and is pathetically eager to do anything you want, if he can only understand your wishes. The difficult thing is not to give way, yourself, to furious outbursts of temper at some one of the many aggravating things a pup will do, and it is the master's part to make the puppy really understand what is wanted, for he does not know the English language! He is not a human child, but a canine one, and his natural world is totally different from ours, but he *does* understand the lan-



Bribe them shamelessly with titbits and dog biscuit

guage of tone of voice, and that you must be careful to keep kind and firm. Never strap a young puppy, nor do anything really brutal, no matter how great your righteous anger may be. One or two such wild outbreaks on your part will ruin your influence with him forever, and beget in him fear of you in place of loyalty and affection. If a thoroughbred, his fine blood will tell in the end. Bribe him shamelessly, with titbits and dog biscuit, and make the doing of your wishes a joy to him, with a substantial reward attached.

In that way only can he be raised to dog-

hood, a gentleman. At two to four months he should learn general manners—things that no dog can do—and also reasonable obedience, for a puppy; at four to eight months, minding your whistle, coming in when called, walking quietly beside you when required—an irksome business for any pup!—and not to rush out and bark at people and carriages, or to jump all over one's new overcoat with muddy paws; and at eight to twelve months his yard breaking as a hunting dog will begin, if he is one of those breeds.

As an aside here, it may be well to remark that no bird dog or hound that does not show natural ability to hunt at a very early age is worth spending much time over. I have known both setter and pointer pups who would notice all birds and point them at two months, and at four would stand stanch on point. Among hounds the tendency to puzzle out trails and hunt on his own account should appear at six months of age at the latest. With such material to work on, there should be no difficulty in training your own hunting dog to retrieve, stand fast and not flush, and obey quartering whistles, all of which is clearly explained in any standard book on the American hunting dog.

Roaming, and disobeying at what the dog considers a safe distance, can be checked with an air rifle. The dog soon learns that once out of your reach you have no power to punish his disobedience, but an air rifle, judiciously used to enforce commands, will cure that, and make him fear to incur your displeasure as far as he can see you. If you have an unfenced truck garden or flower beds on the place, it will probably be necessary to keep the dogs penned up when not out with you or the children. No scheme of tying a dog by a leash or a running line, such as a ring strung on a taut wire, seems to work. He will always wind himself up around any fixed point of attachment, and if tied by a ring to an overhead line will sit at the house thereof and howl. But a yard of his own, even a small one, 10x20 feet, of chicken wire, will do well enough. It is the leash that the dog objects to, and most hounds will bite it in two. To keep a dog chained to a kennel is surely a condign form of punishment. [CONTINUED ON PAGE 64]

What Men Should Know About Babies— The Finest Crop We Grow

By Mrs. Max West

Of the Federal Children's Bureau

DID you, as a man, ever stop to ask yourself what it is you are working for on the farm? Isn't it to accumulate enough property so that you and your family can live comfortably and enjoy life?

To do this you've got to have not only the property and the money, but also a healthy, happy wife and children, don't you? Without health there can be little enjoyment of the good things of life, can there?

Therefore it is important— isn't it—to see that in working and saving time you do not work so hard that you break your own health, your wife's health, and your children's health, and find yourselves unable to get any pleasure out of "spending and enjoying time."

One of the most important points to watch is your wife's health, because that affects not only her, but also the children she bears you. So I am going to tell you something about what child-bearing means to your wife, and some of the simple precautions you can take to see that she comes out of her child-bearing experience strong and well, with strong, healthy children. I will preface my story with a few facts:

For instance, did you know that babies are born in the United States at the rate of more than four a minute? A baby every fifteen seconds, in fact, day in and day out, week after week, year by year. The records show that there are constantly in our midst more than 2,250,000 brand-new babies. Now what happens to them? How many of them live? How many die? What permits them to live, and what kills those who die?

Improper care of the mother before the baby is born kills many of them. Improper care of the baby after it is born kills its share. The first cause mentioned kills thousands of the mothers, too.

Thousands of mothers and babies die, or live miserably all their lives, from causes which proper care would prevent. The power to supply this care is often in your hands, as the man of the house. I hope to show you why and how this is so.

It is a fact that each year 300,000 children under five die in the United States largely from preventable causes.

The number of babies out of each thousand born alive who die before they are a year old has been called the most sensitive index of our social well-being. As the mercury in the thermometer rises and falls with the changes in temperature, so the baby death rate goes up or down according to the living conditions of the families.

According to the latest report of the Bureau of the Census on mortality statistics, the baby death rate of the United States registration area was 101 in 1916—that is, for every 1,000 babies born alive 101 died before they completed the first year of life.

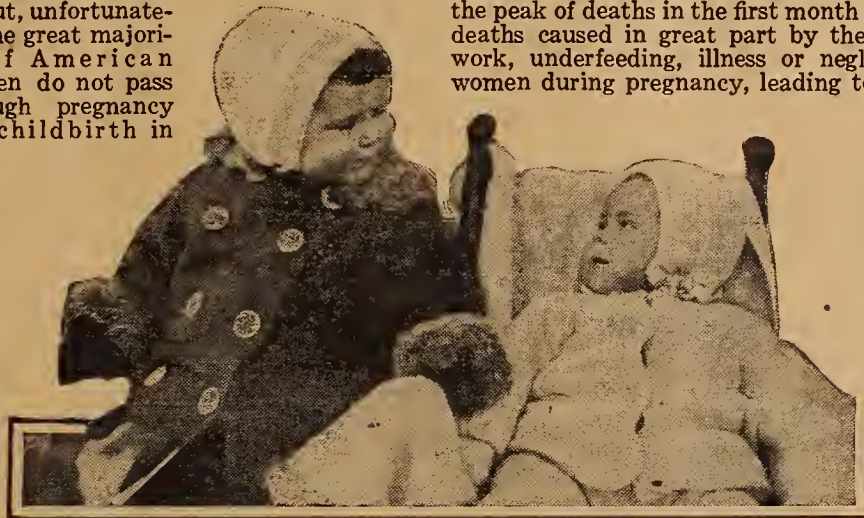
There are three principal causes of infant deaths: First the natal and prenatal causes, or those which are due to bad conditions surrounding the mother before or at the birth of the baby. The second largest number of deaths are due to gastric and intestinal diseases, and the third, to infectious diseases, largely bronchitis and pneumonia. More than three fourths of the deaths during the first month of life are related to the mother's condition before the child was born. Yet the actual loss of infant life in the first month shows as yet no decrease from year to year. On the other hand, deaths from gastric and intestinal diseases during the later months of life are decreasing.

A great many young mothers still lay down their lives, needlessly, in the performance of their most important function—the carrying on of the race. More than 16,000 women thus are cut off every year at the moment of their highest usefulness, leaving a trail of broken households and sorrowful children.

Since the discovery, about the middle of the nineteenth century, that disease is conveyed by germs, and may thus be carried from one person to another, and, later, that the activity of germs may be destroyed by disinfection, the work of surgeons and physicians has been completely revolutionized.

The most fatal complication of childbirth is childbed fever, or puerperal sepsis. This meant in former times the certain death of many young mothers. Since the discoveries just mentioned, only one woman now dies as compared with fifteen or twenty formerly.

In the best hospitals and private practice it is considered almost a disgrace to lose a patient from this cause, save in the very few instances in which it is humanly impossible to prevent it. But, unfortunately, the great majority of American women do not pass through pregnancy and childbirth in



Not much room for doubt as to the kind of care these cousins had, is there?

the care of the best physicians or hospitals, and many hundreds, indeed, go through with little or no care of any sort, or with such indifferent attention that it almost amounts to neglect. Many women never see a doctor until labor begins, when it may be too late to prevent trouble. Many live at such great distances from hospitals and doctors that good medical attention is almost impossible to secure, while many more do not themselves understand what proper care means, or what the lack of it may mean to them.

Just as soon as the majority of women and their husbands really understand these things they will demand better conditions, and will make it possible to secure them. In the matter of saving the lives of mothers, fathers are particularly responsible. Busy women, with a family to work for, and with a thousand duties in the home, find it hard to stop for needed rest and recreation. They find little opportunity to consider their own condition or to go to see a physician, and are apt to conceal, as far as may be possible, bad symptoms. In such instances the husband should protect his wife against herself and her family. Inconvenient and expensive it may be, but neither should weigh in the scale against the life and health of mother and baby. The few extra hours and dollars spent to safeguard them now will be an investment which will bear good interest for all the future years of the family life.

It has been proven by many careful experiments that good care before and at birth will:

1. Save the lives of many mothers who now die needlessly.
2. Greatly increase the after-health of many mothers.
3. Save the lives of thousands of babies who now die needlessly.
4. Result in a greatly improved race of babies who will be strong and healthy from birth.
5. Make it possible for mothers to

nurse their own babies where they might not without this care.

6. Increase the sum total of family happiness and welfare beyond all calculation. Surely that is worth buying in the open market!

The sum and substance of the whole matter of infant and maternal mortality is, then, education and more education.

Let us look at the modern methods of preventing this unnecessary loss of young mothers and babies. We shall cut down the peak of deaths in the first month of life, deaths caused in great part by the overwork, underfeeding, illness or neglect of women during pregnancy, leading to still-

states included in the registration area, before they have finished the first month of life, than in the cities of the same states. Very possibly the effects of toilsome work which many women have to do on the farms, together with a possible lack of medical and nursing care, before, after, and during birth, in rural sections, may be shown here.

Contrasted with this are the figures for the latter half of the first year. Here the country baby is better off than the city baby. We are now looking at the effects of the feeding, care, and health protection of babies. The babies which have survived the first month have passed beyond the prenatal conditions, for the most part, and are face to face with bad feeding, neglect, ignorance, bad surroundings, and infectious disease. Quite a host of enemies to face, is it not?

The statistical tables say that the second great cause for infant deaths is the gastric and intestinal diseases, largely the summer diarrhoeas. But as a matter of fact in many cases it was not the disease that caused the baby's death, but sheer ignorance. It is a sad and often a tragic fact that the mother, who loves it most, knows little or nothing about the baby's care. It is only very recently that it has been discovered that feeding a baby properly is a highly important matter, and one which must be thoroughly studied, just as the best rations for many kinds of farm animals are a matter of great study by scientific men.

Until very recently mothers have had very little help in meeting the problems of their children's diet. The result is shown in figures like those given in the table. Breast milk is the one really proper baby food, but thousands of mothers are allowed, or even encouraged, to wean their young babies, quite unaware that they may thereby jeopardize the baby's very life. Mothers who have been glad to nurse their babies may not have known that even a breast-fed baby may be made ill if he is overfed or nursed irregularly.

There is one more thing about country babies: They should certainly not be denied plenty of fresh air. With a very little thought and trouble the babies in the country can live in the open air nearly the year around. Sleeping porches should be part of the equipment of every country home, and properly protected porches afford a paradise for the baby in every part of the year.

The education of mothers in the care and feeding of their babies, and in protecting them against illness, is being carried on in various ways throughout the country. One of these is the public health nurse, often employed by the county or by some local association within a community. The public health nurse is not intended to do sick-bed nursing, save in great emergencies, but is an educator, going about the community to help people to keep themselves well.

Another method of education is that of the Children's Bureau of the U. S. Department of Labor at Washington, and by other bureaus of the federal, state, and local governments in sending out educational literature. The Children's Bureau will send a list of its publications which are for free distribution to you upon request. Or you can write to the Better Babies Bureau of FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

These two methods of cutting down the infant and maternal mortality of the rural districts are readily available. To send to the Children's Bureau, Washington, D. C., for pamphlets on the care of mothers and babies, as well as for information on other sources of help, is but the work of a moment, and costs only the postage stamp necessary to carry your letter. For the wonderfully helpful monthly letters which may be obtained from FARM AND FIRESIDE, you have only to enclose 50 cents, which barely covers the postage. Any woman, no matter how far she lives away from her neighbors, can do either or both of these.

The clubs organized under the county home demonstration agents, the granges and farmers' [CONTINUED ON PAGE 55]



One way to keep a baby happy is to keep him busy

births, premature births, or babies born too weak to survive, by the insistence upon better care of prospective and actual mothers.

At the same time we shall cut down the appalling mass of maternal deaths. This means that husbands and fathers, and mothers themselves, must recognize the fact that while pregnancy is a normal physiological condition, through which thousands of women pass without mishap every year, every woman pregnant should be put under the care of a good physician as early as possible in pregnancy.

Especially important is it that women pregnant for the first time, and women who have had any form of trouble at previous confinements, should be under a doctor's care during pregnancy. After the early months he should be able to advise wisely regarding later care, and decide what particular attention, if any, the patient will require at childbirth.

For the average healthy mother a simple routine of personal hygiene should be made possible. This means that she should have a plentiful diet of well-cooked and nourishing food; plenty of sleep at night, and some rest every day; plenty of fresh air, night and day, summer and winter; some out-of-door exercise every day, or rest out of doors; a bath every day; comfortable clothing; freedom from worry and trouble, and some quiet recreation. It also means that she should be relieved from burdensome work; that, if she is out of health, she should have necessary treatment; her teeth should be put in order, and in every way she should be helped to make it possible to bring a healthy baby into the world, and come through it with flying colors herself. These things sound a little too ideal perhaps to the busy farm mother and father, but they are not impossible, and must be judged not by their present cost but by their future value. In the great majority of cases they will repay it a thousandfold.

It is interesting to note that a larger proportion of babies die in the rural part of the

Can You Afford to Have Running Water on Your Farm?

By Helen L. Crawford

Household Editor of Farm and Fireside



Mrs. Foster, Monroe County, New York

I HAVE been interested, and I believe you have been too, in all this talk we hear nowadays on both sides of the subject of running water on the farm. The questions, "Does it pay?" "Can we afford it?" "How much does it cost?" and others of the same kind probably have occurred to you, as they have to me, if you haven't already got running water. So I decided to go out among some of the farmers' wives who have water systems, and learn the answers, in the hope that the information might be of some use to those of us who are still merely "thinking about it."

I went to farms where water systems had been in use for some time, and talked to the women to find out if they and their husbands thought the benefits derived compensated for the expense of installation.

The first farm I visited was in Cayuga County, New York, a few miles out of the town of Genoa. Mrs. Morell Wilson, my hostess for the day, was most kind in taking me about the place, and in telling me about their system.

"We have the gravity system," she informed me. "And it has been a great success. We installed it six years ago, and it has given us no trouble at all. As to benefit—I gasp when anyone asks if it has been a help—I can't begin to calculate what a help it has been. Our well wasn't so far from the house, but when so many, many trips had to be made each day those steps soon mounted up. And think of wash days—the lifting my stationary tubs do away with! I often wish I could do something to make other farm women realize what they are missing by not having running water."

"It has saved us not only work, but also money. You see, before we had running water I couldn't do all the work myself—it was too much for me. We always had to have help. We didn't have first-class help—we had what would be classed as 'inexperienced' help. That cost us \$2 to \$3 a week; that was before the war, it would probably be much more now. Since the water system was installed I have done all the work myself, only having someone in at times to help me clean. So in the matter of help alone the system saves us from \$100 to \$150 a year, and more than paid for itself long ago."

"We had the furnace put in at the same time, you know. That too has been a great comfort. It was such an effort to keep all the rooms warm when we had stoves. And I don't believe we use any more coal with the furnace than we did keeping five stoves going."

"How did you happen to have the systems installed?" I asked her. "Was it your idea or Mr. Wilson's? And how did you happen to feel the need of it?"

"The credit is all due to her," interrupted Mr. Wilson. "I would never have thought much about it. You see, I've lived on a farm all my life, and we never had running water, or steam heat, or any such conveniences that we think of as necessities now, and I just naturally didn't miss them."

"Mrs. Wilson lived on a farm too, when a child, but later moved to Auburn, where she became accustomed to having things more convenient. When we were married and came here to live she couldn't get used to not having heat and running water."

"We couldn't afford to install the systems at first, but Mrs. Wilson never got over wanting them. We always attended Farmers' Week at the State Agricultural College at Ithaca, and never missed a lecture on water systems and such improvements. And we always visited the Farm Mechanics Building, and looked over the systems on display there."

"Finally we decided to have a heating plant put in—we have steam heat—and one thing led to another, and we had the water system put in then too."

They said the system had not cost them very much. You see, Mr. Wilson is one of those fortunate individuals who is handy at all sorts of odd jobs, and he saved a lot on the labor bill by working himself. On the septic tank, for instance, he saved quite a bit. The company told him it would cost \$40 to install the tank. He hired his own help, oversaw the work himself, and put the tank in for \$15.

"I can tell you just how much each item cost us," said Mrs. Wilson. "I had the figures in an old notebook, and have kept it because every once in a while some one of the people around here asks about our water system, and of course they always want to know how much it cost us."

Here are the items as they appeared in her book; each item would be more now, but one would save more in dispensing with a servant:

1,220 feet $\frac{3}{4}$ -in. galvanized pipe.....	\$54.00
Bathroom fixtures, three pieces.....	50.00
Kitchen sink.....	15.75
Fittings.....	31.50
Washbowl in washroom.....	7.25
Lead soil for the septic tank.....	15.00
Two granite washtubs.....	17.60
Galvanized pipe in house.....	8.50
	<hr/> \$199.60

There is a hill back of the Wilson home where trickles a nice live spring. They have their tank on this hill—200 feet from the house, and 40 feet above the level of the floor of the house. There is a branch pipe running to one corner of the barn, so that Mr. Wilson can water his stock with ease.

Although there are bedrooms up-stairs which are in use when their sons are at home, they had the bathroom installed down-stairs, as the room they use is down-stairs. They have a bowl in the wash-room for the men.

"That's one thing I would change if I had it to do over again," asserted Mrs. Wilson. "I'd have a larger bowl for the men. I got a small one, and it is hardly satisfactory. The men, however, are perfectly free to use the bathroom, and like to bathe when they come in tired out and sweaty from the fields. A bath seems to make them feel like new men."

"My stationary tubs are a great help, as there is no carrying of water when I wash. They are handy in the washroom, but I want to fix up a laundry in the basement. I want a power washer, and think the basement's the best place."

There is a hot-water tank in the kitchen, so that Mrs. Wilson has hot water on hand whenever there is a fire in the stove.

"Before we had our house fixed over," she told me, "our dining-room and kitchen were on the north side. The dining-room was a cold room, and the sun didn't reach the kitchen until mid-afternoon. When we had the heating and water systems installed I had that changed, and put the kitchen and the dining-room at the south end of the house. Now my dining-room is the most pleasant room of all and it used to only opened a few times a year."

be a parlor which was times a year.

"When I go riding and see farm kitchens at the north end of the house, with no sun and no view of the road, I think, 'Oh, dear! I wish they could do what I did!'"

"When we decided to have the water system installed I got a table from the agricultural college and found out how high I ought to have my sink to make my work easiest. When the plumber put in the sink I told him how high I wanted it."

"I know how high to put a sink," he said, not liking it very well that I should tell him how to do his work.

"Well, I know how high I want it, and ought to have it for my height. I have a

table that tells just that, I informed him.

"You have! Can I see it?" said Mr. Plumber, and he took it home with him to study.

"I want to label it 'foolish question' when anyone asks if we like the system, or if it makes our work noticeably lighter."

From there I went up to Monroe County to visit a farm near the town of Webster. This farm is owned by William J. Foster. The Fosters have a pressure system, have had it since 1912, and have found it perfectly satisfactory.

"Before we had the water system put in," Mrs. Foster told me, "we had a cistern in a little room at the back of the house. It was 40 feet from the stove to the cistern, and to fill the tank in my stove I had to make four trips. And the tank usually had to be filled twice a day."

"We used well water for drinking, and I always used to have a pail of it on the kitchen table. It's 25 feet from the well pump to the kitchen table, and I always used at least six pails a day—usually a great deal more than that—so you see I had quite a lot of walking to do. Our outdoor toilet was 100 feet from the house, and of course there's no comparison between that and having one inside."

They had the water piped to the barn, too. The pipe goes straight out from the house, and branches just before it reaches the barn, going to both the horse and cow stables. The faucets are inside the barn, but Mr. Foster has cut a hole near one of the faucets, and has a short hose which he runs through this into a large tub where he can water the stock outside.

Mr. Foster told me that having the water piped to the barn saved him at least two hours every day. So in a year's time, not working any harder, nor any longer each day than formerly, he saves 52 working days, counting 12 working hours to a day. Needless to say, he feels amply repaid for the expense they were put to in having the system installed.

As they have figures showing that the installing cost them \$287.42, and as Mr. Foster saves 626 hours in a year, not counting that he saves time on Sundays, how many times do you suppose their system has paid for itself?

Besides the convenience of having running water in both kitchen and bathroom, Mrs. Foster uses the motor for operating her washing machine, her separator, and her churn. They have tanks for both well and cistern water, so all of Mrs. Foster's carrying of water pails is a thing of the past.

I asked Mrs. Foster how they happened to install the system.

"Well," she said, "I hadn't thought about running water. It came about this way: One day I suddenly decided I wanted a separator, and phoned in to town and told the man to bring one out. When he brought it he suggested that we get a motor to run it; so we did. Then Mr. Foster built a little back room over our cistern, and we used it for a creamery. But this cistern, as I said before, was 40 feet from my stove. I wanted a pump in the kitchen so I wouldn't have to walk so much. I called up to find out about pumps, and they said they had a brass pump at \$7. I thought that was too much for that little help. Then they suggested getting the pressure system. I talked it over with Mr. Foster, and we decided to have it installed—and there you are."

"What did Mr. Foster have to say about the system? Did you have any trouble talking him into it?"

"Why, no; none at all. As soon as he got to thinking how much it would help he wanted it just as badly as I did."

"Do you know, I don't see why women are continually blaming their husbands because they have to carry water

[CONTINUED ON PAGE 52]

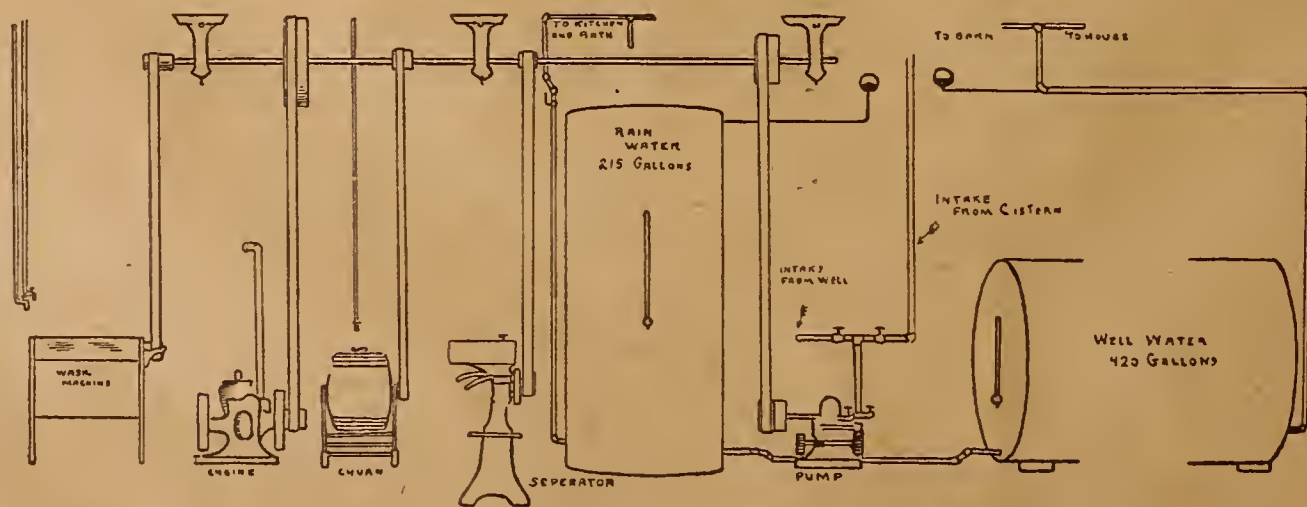
Contest Announcement

How I Made Life More Livable on Our Farm

IF YOU used to wonder how on earth you could possibly get through the housework and the other work you had to do, and if you finally struck upon a scheme to improve the situation, write us a letter telling about it. The more difficulties you met and overcame, the better we'll like your letter. We want the true stories of obstacles overcome, and we will print them in the hope that they may help others to do what you did.

We will pay \$15, \$10, and \$5 for the three best letters, and will pay for all others we use. We cannot return letters we don't use unless you enclose the postage. Keep your experience within 500 words, and send it in before January 25th, addressing Household Contest Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

HOUSEHOLD EDITOR.



Plan showing the arrangement of the different conveniences in the Foster basement

"Tobacco's a Good Crop, But Not an Easy One. I Know. I Grow It"

By James Speed

IF YOU are thinking about growing some tobacco in your part of the country, this story ought to be useful and interesting to you. It is the story of a successful Kentucky tobacco grower, and what he says is aimed to show you that tobacco is a highly complicated crop, and one which no man should take up without first fully finding out what he is about.

Tobacco is one of our big crops down here in the South, and I know the growing of it is spreading to new sections. If I have one definite suggestion to make to you who are intending to start tobacco, it is that you get in touch with your state agricultural experiment station or county agent, and find out what they know about the crop in his section, whether it is possible or profitable, and how it can be grown.

Naturally, I aimed to get a good first-hand story of this crop from a man who makes it. And I found that man in the person of William R. Gross, on his 70-acre farm not far from Louisville.

Gross and his hired men, both black and white, were seated on the big back porch taking a noon hour after a morning of heavy work setting tobacco. Gross started as a renter and became an owner. He was delighted to meet someone who was interested in his work and in the men who were becoming owners of land, after years of hard work as tenants. A few questions, and he talked at length.

"Take me for instance," he said, "in the old days when tobacco was low-priced—I didn't have any show to get ahead. I was renting land for tobacco and a few other crops for twenty-three years, and in that time I moved five times. Moving everything you own in horses and stock, and your wife moving all the household plunder, wastes a sight of money. Then, too, a man that's renting nearly always has some crop or stock that he and his landlord haven't divided. In making a trade to settle things in a hurry at the end of a season, the renter has got mighty little chance to make a real good trade. Lots of times he's got to take just what he can get and let it go at that."

When asked about his farm and the amount of money he got from his tobacco crop last season, Gross said: "I bought this place of 70 acres two years ago. I paid \$270 an acre for it. It was a good, stiff price when you take into consideration that there wasn't any tobacco barn on it, and mighty few outbuildings or fences; but I knew it was good land if the fence rows were overgrown. I knew I could grow about 16 acres of good tobacco on it each season for some time, and that was what I wanted."

"Last season my son and I had in 16 acres of tobacco. This crop weighed 1,400 pounds to the acre, and averaged 40 cents a pound all around. When a fellow can get right at \$9,000 for 16 acres of burley tobacco there isn't any sense in his paying rent for land. I almost forgot to tell you that, besides farming the 70 acres in my farm, I'm renting an adjoining place of 50 acres, so I can grow other crops and keep my teams earning their living when they aren't busy in the tobacco."

As the men got ready to go into the field to set tobacco, Gross took me down to one of his tobacco beds. This big cloth-covered bed was situated immediately below a pond, so that, when necessary, the plants could be watered with ease. A portion of the cheesecloth covering was thrown back, and the men began to pull the small plants and pack them into boxes and baskets to be taken to the field. Mr. Gross explained the planting and care of this bed as he bent over his work saying:

"Yes, tobacco's a crop that takes a long time to grow and market. We selected this place for a tobacco bed because it was rich and hadn't had any crop on it for a

long time. Late last winter logs and trash were piled on it, and burned until all the weed seed were killed. We aim to plant our tobacco beds before the first of April; early in March is best. With the weed seed

got to have wet weather for the work or the young plants will die. With a planter the setting goes right along, as the machine wets the soil around each plant it sets."

In the photo of the machine at work in

I've got a neighbor just below me on the pike. He's bought just seven acres. He's still renting land to grow extra tobacco and crops on; but he isn't going to move around any more, because he has a place

for his work stock, his cows, his pigs, and his wife's poultry. There's lots of them of this sort, and they're buying pieces of land running all the way from three to a hundred acres. Of course, the fellows who buy just a few acres can afford to pay a great big price for it, and all of this has boosted land prices until they look clean beyond reason; but they aren't. When a man has to pay the owner of the land one half of the tobacco crop, it often runs into big money. Take my crop, for instance, this last year—if I had been renting the land, like I used to, I'd have had to give the owner of the land almost \$4,500. That's a pretty steep rent to pay for 16 acres of land, don't you think?"

Asked if he did not believe the high price of the weed would tempt farmers in many other States to try growing this valuable crop, he hesitated before saying:

"Of course, you understand, I am not anything but a grower. I don't follow the market real close, except on burley, and then only in the selling season. So, you see, I don't understand thoroughly just what other sections do; but I've kept my ears wide open when I've been on the loose-leaf floor during the selling season. You know a fellow can pick up a whole lot of information that way, and by adding to it what he already knows he can sometimes come to pretty good conclusions.

"Now, I do know one thing for an absolute fact, and that is that a section of country that has never grown the weed has a mighty poor show of making a decent crop. Why, a man's almost got to be born in a tobacco patch to know all about this crop. What I mean is, it isn't one bit like wheat or corn or cabbage or anything else. Besides all of this that the grower has to know, is the matter of having the barns to store and cure the crop. Most of the farms in this part of Kentucky have big barns on them that were built to house and cure tobacco before lumber was so high-priced. You see, we've been growing tobacco for a mighty long time."

"I was just saying now that the tobacco was a hard crop to handle, and it is. The plants have to have careful attention from the time they sprout in the beds until they're sold on the loose-leaf floors. We're planting this field right now, and from now on the crop has to be cultivated continually, and sprayed with Paris green to keep off the worms. Late in the season, when the plants grow pretty high, say with 14 or 18 leaves on them, we top them."

"Topping is just breaking off the top bud so that the plant won't grow any taller, but it'll make the leaves it's already got grow big and fine and full of body. Of course, after we top the plants, suckers are sure to grow out where the leaves join the stem. And these have to be pulled off all the time."

"When the big, broad leaves begin to show that they're ripening, we get busy cutting the crop. A sharp tobacco knife is used to split each stalk through the middle, almost down to the ground, and then the plant is cut off, and kind of straddled on a tobacco stick so it can be hung in the barn. I almost forgot to say that you've got to let them wilt a while before hanging in the barn."

"Seems like I'm telling you a lot, but I do want you to see how much a fellow's got to know about tobacco before he can grow a crop that'll top the market. If you'll look at my barn over there, you'll see there are a lot of planks in the side that are on hinges. That's so they can be opened or shut during the time tobacco is curing. Tobacco has to have air to cure as it ought to, and to give it a good, bright color. Many a fellow [CONTINUED ON PAGE 64]



Tobacco is a very complicated crop. When it reaches a certain stage you have to split the stalks, as you see on the far side of this picture, and let it wilt

"Pretty nice stand of burley you've got there," says his neighbor, over the fence



Gross and his two hired men choosing young tobacco plants from the canvas-covered seed bed for replanting in the field



And here they are operating the planter. Gross works alongside his men throughout the season

killed the little plants don't need any weeding, and the canvas cover keeps the cool nights from hurting them."

When enough plants had been secured the men were ready to take their places on the planter. Gross explained the use of

the field, Gross is seen in the small seat at the right at the back. He and the man next to him have their laps full of plants, which they place in the ground at the proper intervals.

Gross is one of those men who, once they



Mr. Gross

He was in college a short time, and left it to enter the newspaper field. Later, he became associated with Henry Watterson on the Louisville "Courier-Journal," and for about seven years edited the agricultural section of this paper, which was known as "Farm and Family."

Following this, Speed took charge of the publicity work for the Kentucky State College of Agriculture, in which capacity half of his time is taken up, and the remainder devoted to the organization of farm community meetings, which are held in about forty of the more progressive counties of Kentucky.

THE EDITOR.

machinery for setting tobacco by remarking, as he adjusted the water supply on his machine:

"Up until a few years ago nearly everybody set out tobacco by hand, but labor was cheap and machinery expensive. One big trouble in hand setting is that you've

have their feet firmly planted in soil which is their very own, make strong, fine citizens. As he sat on the wheel of the planter chatting, he said:

"This section of the State is going to be helped a whole lot now that so many tenants are getting ahead and buying land."

Making the Country Store Work for the Farmer

By James H. Collins

ONE chilly fall day a typewriter salesman stepped off at a country railroad junction, with a couple of hours' wait ahead of him. There was no town there at all—just one rambling general store. The storekeeper had opened a big box and was taking out horse blankets. The salesman watched him.

"Have you got any printed letterheads?" he asked suddenly.

"Yes. Why?" said the merchant.

"I believe I can help you sell those horse blankets," replied the salesman. He had a sample typewriter. Sitting down with some carbon sheets he quickly wrote twenty-five letters to farmers whose names were given him by the storekeeper. He told them that a new load of horse blankets had come in, named the prices, and reminded folks that it was humane and also good business to look after a horse's comfort.

"When I come back this way next month I am going to ask you to buy a typewriter," announced the salesman. "I am sure those letters will make you want one."

Several weeks later the storekeeper was waiting with a typewriter order, for the letters had brought him several hundred dollars' worth of trade. Farmers had never got a business letter from him before. They came in to buy horse blankets on his friendly tip, and also bought other things.

For fifteen years or more the country general store has been ailing. Until lately country storekeepers believed that the trouble was price competition of mail-order houses—many still believe it.

But now it is gradually becoming clear that competition is not a matter of prices at all, but of service to farmers. Here and there over the country the storekeeper in a farming town has demonstrated that with service to one's farm customers it is possible to build up a big business in the smallest place. There are not many such stores yet. But in scattered places merchants enterprising enough to go after farmers with service have proved that the principle was right. Neither mail-order competition nor a small town are handicaps. Farmers prefer to buy near home if they are given service, and even to pay a little more for convenience. A country store serving a population of from 500 to 2,000 buys as much merchandise as a factory town of 5,000 to 10,000 people.

How can a country store serve country people?

In many ways. When the merchant with a new stock of horse blankets reminded farmers round about that the time had come to keep horses comfortable he made a beginning in service—simple enough, but on the right lines.

One of the most thriving country stores in the United States is in Iuka, Kansas, a town of 200 people in sparsely settled farming country. This store operates a flour bank. It buys flour by the carload, at the lowest price and freight rates, and sells farmers coupon books good for five or ten or more sacks of flour. It has a special room for storing flour, where it is kept dry, clean, and safe from pests. The farmers who hold coupons on the flour bank come in and take out flour as needed, get the benefit of car-lot prices and freights, and are not troubled with storing flour at home. As coupons are bought before the flour is wanted, that furnishes money to finance the business; and the flour bank draws customers for other merchandise.

This town had no ice plant—few country towns of that size can afford one. But the store installed an eight-ton artificial ice plant, with a cold-storage room large enough to hold a carload of eggs, butter, and other perishables. Farmers bring in perishable stuff during the season of heaviest production and lowest prices, the store paying them cash, and holding produce in its cold-storage plant until there is a car to ship to the city. Ice is also sold to the farmers to take home.

Each summer this store takes a neighborhood census, covering both the things farmers will have to sell at harvest and the things they will want to buy. This is as simple as it is convenient. Postal cards with printed reply forms are mailed to every farm for 15 miles around, asking for estimates on what each farm will sell and



Mary is waited on and treated with a personal understanding of the importance of that sweater to herself

buy. About one farmer in four sends back his figures, and thereby it becomes possible to organize the handling of farm stuff and get it away to market during the rush season. That neighborhood buys a good deal of farm stuff elsewhere—potatoes and apples, for instance, which are not grown there. The census makes it possible to purchase this produce by the carload at reasonable prices to farmers, and have it

on hand when they can come to town.

What do you think of a store that has a correspondent in every village and township throughout the territory from which it draws customers? This store has a staff of correspondents, and they send in information which furnishes a foundation for service. Farmer Jones intends to build a barn—the store can help him with tools and hardware. Farmer Smith has a new



How a City Mothers Its Mothers

HOSPITALITY in true Western style is extended by the city of Phoenix, Arizona, to its guests, the families from the surrounding farm lands and mines who come to do their shopping.

Most of the women have to return the same day or late in the evening. Some must bring their children, and a shopping day used to be one of dread—hard on the body and trying on the nerves. But the city of Phoenix got the idea of mothering these mothers, these guests for a day, who bring business to the town.

Now when a farmer's wife is shopping in Phoenix she is made welcome. In the municipal reception building the city keeps "open house." There is a large reading and lounging room, comfortably furnished, a rest-room, and a kitchen where the shoppers can prepare a warm lunch. They can bring their lunches with them from the farm, and put them in the refrigerator until needed. There is a nursery where the children can have their nap.

Purchases made at any store are delivered to the municipal building, and looked after there until the mother is ready to go home. This one item received a heartfelt vote of thanks from those who know what it means to carry

bundles and drag a tired child around.

Friends and relatives find this a convenient place to meet when in the city for a day. And while this reception building is primarily for the out-of-town people, many women from the offices drop in at noon to make a cup of tea and eat lunch. There are telephones, writing desk with writing materials, a place to clean up, and plenty of good books and magazines. The public library maintains a branch library in the building.

Everyone is made welcome by Mrs. Abbott, the matron, who acts as hostess, trying to give each person the care and consideration that she would if this were her private home and the patrons her invited guests.

The merchants of the town who did this merely awakened to the fact that these farmers' families were a big asset to the city, and that anything that could be done for their comfort was a polite way of saying, "Come again!"

The city had 3,500 guests last month, and is already beginning to feel that this reception building—which they thought so commodious—is a little cramped and crowded, which shows that mothers like to be mothered a bit themselves occasionally.

L. M. EDHOLM.

baby—it is quickly reported, and his wife is congratulated, and the store serves by selling the things that babies need.

Still another famous country store is at Lakeville, Indiana, a village of only 300 people, 10 miles from a large city. Farmers frequently drive through the city to shop at this village store, which does a business of \$60,000 yearly.

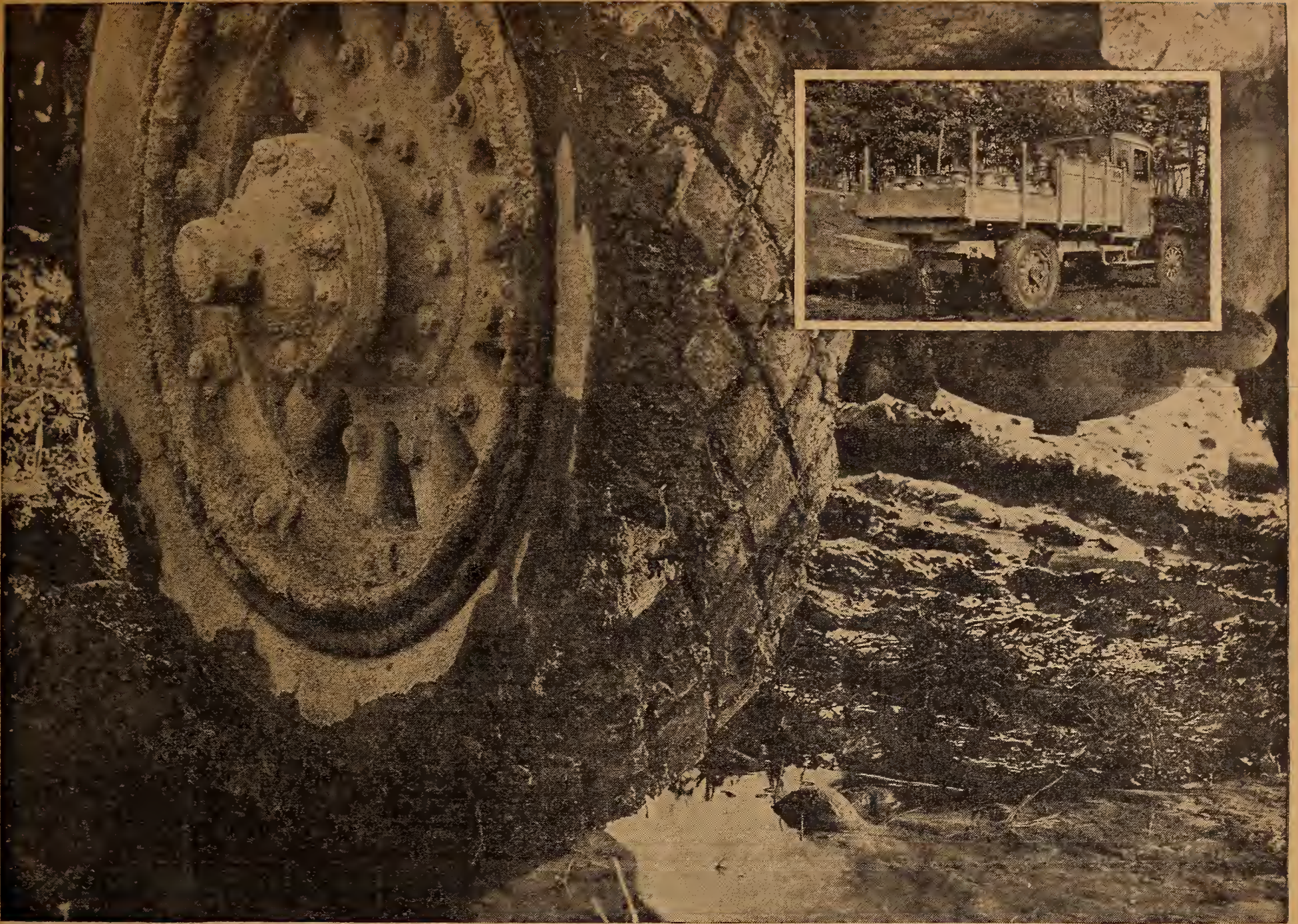
City department stores serve women, understanding that they are the purchasing agents of the home, with a perplexing, responsible job on their hands. This Indiana store has been built up on service to country women, the purchasing agents for farm homes. Maybe the farm home needs painting. Somebody will choose the paint and the color. This storekeeper assumes that it will be a woman's selection, and sees that the farmer's wife has color charts and paint prices. City women buy things in small packages—starch in one-pound boxes, crackers in ten-cent cartons, coffee in one-pound cans. Country people have more pantry space and go to town infrequently. So this merchant gives service by selling starch in special three-pound boxes, crackers in ten-pound drums, and coffee in five-pound cans. A lot of attention is likewise paid to what goes on around the countryside. If a farmer buys a new auto, the store knows the day he drives it home, and he is invited to bring it around so the storekeeper can see it. If the farmer's daughter is going to school this fall, she will need a sweater, and the store writes about sweaters to Mary herself, and waits on her personally when she comes to buy, respecting her choice before that of her parents, and treats her with an understanding of the personal importance of that sweater to herself.

Quietly, all over the country, the general store is having a great revival.

Just as farming began to look up fifteen years ago, when scientific methods were developed at the experiment stations and taken out to the farms, so the business advantages of the country store and its possibilities for service are being ascertained and made available to merchants. The country merchant of the near future will probably have his business demonstrator, showing him how to get in touch with the farmers he ought to serve, how to give them information and advice, how to buy goods, clean out dead stock, keep accounts, know his costs of doing business, and so on.

The state colleges are working out good mercantile methods for country storekeepers and giving short courses of instruction, and the merchants are flocking in to attend these courses whenever they can find the time. Some of them are held in winter, some in summer, some lasting only two or three days, and others a week or two. There are lectures, discussions, lessons. One of the college professors carries the class through a two-hour practical demonstration of how to figure profits, or mark prices, or take an inventory, or strike a trial balance. He is followed by a banker who tells how to safeguard credit, borrow money, use trade acceptances. After that an expert shows the class how to study mail-order catalogues, with a view to learning how their biggest competitors serve people, and give better service themselves. Then the class probably goes to lunch, and maybe visits a well-managed store on its way back, and the rest of the day is taken up with talks by advertising men, credit men, manufacturers, buyers for large city stores, each of whom has his practical advice upon a vital mercantile specialty.

The country neighborhood and the country store are bound up together. Big cities and big city stores constantly exert a destructive influence upon both. If the country store is losing business and the country neighborhood losing population, the same influences are probably at work. Country merchants used to insist that it was the farmer's duty to patronize them, and grumbled when they saw goods coming in from the mail-order houses, or watched farmers' wives taking the train for a city shopping tour. But to-day the country merchant thinks along another line—he admits that it is his duty to serve farmers, and through good service bring customers to his store.



"MY Goodyear Cords have paid for themselves in ten months with all-round savings of time, labor, repairs, etc. I figure the reduction in gasoline alone will pay the cost of these tires over solids. They have traveled nearly 10,000 miles to date and are good for another year at least."—Herman Marks, Farmer and Rural Expressman, R. F. D. 6, Waukesha, Wisconsin

THE advantages of hauling on pneumatics, as demonstrated by this dairy farmer and motor expressman, are proving of extreme importance to many farmers otherwise hampered by the scarcity of labor.

With motor trucks relieved of the handicaps of solid tires, they now haul across soft fields and through deep mud and snow on the tractive pneumatics.

The cushioning of these tires is a source of valuable protection to perishable produce and prime livestock which must be marketed quickly and smoothly to secure top prices.

Both of these qualities of the pneumatics have

a firm foundation in Goodyear Cord construction, pioneered by Goodyear thirteen years ago and today the basis of the country-wide success of cord pneumatic truck tires.

It is this Goodyear Cord construction which has made pneumatics practical for farm truck service, and thus has enabled farmers to motorize most effectively by using pneumatic-tired trucks to keep their power-driven farm machinery working at capacity.

Authentic information, describing how farmers employ pneumatic-tired trucks and what they save as a result, can be obtained by writing to The Goodyear Tire & Rubber Company, at Akron, Ohio.



GOODYEAR

Why I Believe in Tractor Farming

By J. B. Davidson

Professor of Agricultural Engineering, Iowa State College

THE Editor of FARM AND FIRESIDE has suggested a splendid subject. I could not ask for a better one. I am to deal with the intangible, indefinite, yet-to-be-revealed events of the future. I may make any claims, assertions or prophecies, and no one can prove that I am wrong. In fact, I am not sure that I am right myself, and if I were I should be worth more than I am earning.

Have we forgotten the stories told us at the beginning of the war, of how we would not be able to furnish horses for our army and the farms? This calamity did not materialize, due to the motorization of the army and the farm. It all happened so quietly that we have almost forgotten about it.

Are we to see the use of the tractor to continue to develop? The writer thinks so, and is therefore called upon to state his reasons for so thinking.

In the first place, the tractor has the advantage in the cost and utilization of the energy which it uses. Compare it with horses for instance: Oats and kerosene in the Middle West now cost about the same per pound—that is, two cents. A pound of kerosene, however, contains about two and one-half times as much energy—20,000 B. t. u. for kerosene, against 8,500 B. t. u. for oats. The thermal efficiency of an internal combustion motor and that of a horse under practical conditions is about the same. Stated in definite terms, it is about 20 per cent for both horse and engine while at work. And at this point the internal combustion motor has again an important advantage, for no system of farm management has yet been devised to keep the horse busy all of the time. The horse, however, must eat all of the time, and if kept busy only one third of the time it gives the mechanical motor a decided advantage. Would it not be correct to say that the internal combustion motor has a primary advantage of $2\frac{1}{2} \times 3$ or $7\frac{1}{2}$ to 1? Of course, in the future all will depend upon

the relative cost of engine fuel and horse feed, but known resources would indicate that our supply of fuel will not be exhausted for some time.

If the foregoing statements be true, there must be some good reason why the mechanical motor is not taking the place of the horse faster than it is. There is a reason, and it lies in the problem of application. If the mechanical power in the present form could be as readily applied to all uses for power on the farm, the horse would not be so well entrenched.

Consider the matter of intertilled crops for instance: Corn by the last census is the most valuable crop, and cotton the next most valuable one. These crops require a large amount of horse labor for cultivating and harvesting which has not yet been displaced. It is true, universal tractors for plowing and cultivating have been developed as well as special motor cultivators, but in general they have made little headway as yet against the horse. When the tractor successfully invades the stronghold of the horse in the intertilled crop field, then we may expect the former to make great strides.

Is there any good reason why the tractor should not enter into these fields so strong-

ly held by the horse at the present time? We think not, for the internal combustion motor is the most adaptable motor among the prime movers in use. Furthermore, it is the lightest. Weighing as little as four pounds per horsepower, it was the internal combustion motor that made the aeroplane possible.

At the National Power Farming Demonstration held at Wichita in July last, there was on exhibition a new type of harvester, with its cutting and binding mechanism driven directly from the motor of the tractor through a flexible shaft. The machine attracted considerable attention, but not as much as it should have, for, if the writer

is not mistaken, this is the forerunner of a wonderful line of development. It is the correct principle to be followed in the operation of machines using rotating power. This may be explained simply by calling attention to the fact that nearly one half of the power of a tractor motor is wasted in transmission from the motor to the drawbar, and, in turn, in transmitting the power from the bull wheel of the binder to the operating mechanism. Nearly one half of the power taken from the rim of the bull wheel is wasted. It is easy to see how much more efficient it is to transmit the power directly from the motor to the machine.

May we not see many machines so

operated in the future—corn harvesters, huskers, mowers, manure spreaders, potato diggers, in fact any machine using rotating power?

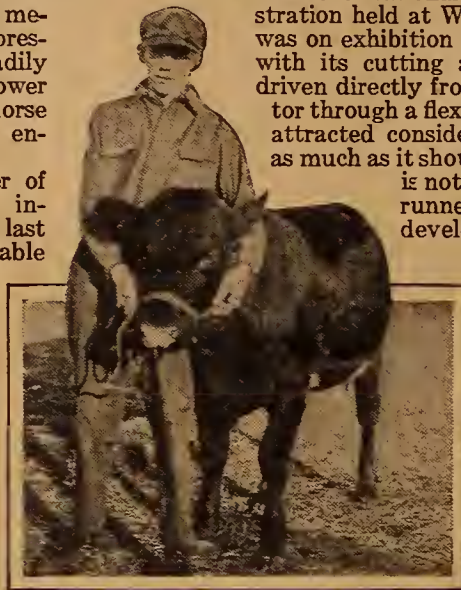
In the case of cultivating mechanism, it is not unreasonable to assume that it would be a particular advantage to have a revolving cultivating mechanism which would do a 100 per cent job instead of a partial one, as at present. It is possible to conceive of revolving shovels cutting around and between the plants in such a manner as not only to leave a splendid soil mulch, but also make it practically impossible for a weed to remain.

In the analysis of the problem of tractor operation, it is generally appreciated that the personal factor is the most important one in determining success or failure. The future will furnish an entirely different situation in this respect. You young men on the farms of the next generation will be nearly as familiar with the internal combustion motor as the young farmers of the last generation were with the horse. You will be able to think and act in terms of mechanical power. You will have absorbed more practical information and experience than the young man of to-day is able to secure in school.

As we think of it now, we wonder why the tractor has not made more progress than it has. It would seem that the engineers have not been as keen as they might have been in making mechanical power more adaptable—but, then, the world moves slowly.

Being naturally optimistic, we see big things ahead for the tractor, and commend it especially to the consideration of the young men of the farms.

The European farmer raises more crops to the acre; the American farmer more to the man. In general, this expresses the difference between peasantry and an independent agriculture.



Harold Brown, Sauk Center, Minnesota, and the calf which won for him in the local calf-club contest. Harold has been in club work for the past three years, and has made a record each year. The lessons learned by budding farmers in junior contests are not soon forgotten, and will make them better farmers and better farmers' wives when they grow up

How the Tractor Helped in My Orchard

By W. H. Losch (Pennsylvania)

WHEN I planted my peach orchard of some twenty acres, seven years ago, I owned no tractor; in fact, the farm tractor did not enter my mind. I was then reading all the orchard literature in the agricultural papers that I could get hold of, and there was quite a lot of it. The orchard wave was then on, or approaching the crest in farm periodicals as the thing uppermost of interest. You know, it has always seemed to me that different subjects run in waves through our weeklies and monthlies. Quite lately it is the farm tractor that is coming to its own.

Well, at that time as I was planting my orchard for peaches, my experience consisted only of book knowledge, and my desk was piled high with it. The profits were to be large—on paper—and after selecting my site for the peach orchard, as peaches would bring results more quickly than apples, I prepared the ground in accordance with the instructions of the authorities whose literature I studied. I planted acre after acre until twenty were in trees one year from bud. I did some dynamiting; I was sure of the air drainage; and I headed the trees low so that the fruit could be plucked from the ground. Of course, some trees died, but in general the orchard flourished. Everything was to be done just right. The San José scale was then in its height, so I purchased the best of power spraying outfits, and I sprayed. I adopted clean cultivation—there must be mulch of earth to absorb the moisture from the air—and I kept the teams of horses with harrows going. I used nitrate of soda also, to hurry the growth along. I did everything I knew how and best, and when the state orchard inspector came along in the fall—for this was to be a state-supervised model orchard—he told me that the orchard looked fine.

After three years and lots of expense I had an orchard with a little fruit on some varieties of trees. The fourth year I had a crop. Some acres yielded me 400 baskets.

No propping of limbs was necessary, for the trees were headed low, with the open center or inverted umbrella style, and each limb supported the one above it from the ground up, as the lower branches touched the ground.

All this time I had been doing my orchard

skinned and that one split as the disk or harrow or doubletree would catch. The muzzles would be torn off by the extending limbs, for the horses were always grabbing for a dash of foliage. Indeed, this cultivation problem began to be a perplexity, so much so that I could not get close to the



I have now worked the orchard for two years exclusively with a tractor

work and cultivating with horses. The trees had grown larger and spread out considerably. I had made some mistakes when I set out the orchard, the worst of which was that I planted the trees and rows only 16 feet apart. The horses in passing between the rows were always in a hurry, and, much to my annoyance, one limb after another would be torn away, and in turning from row to row, this tree would be

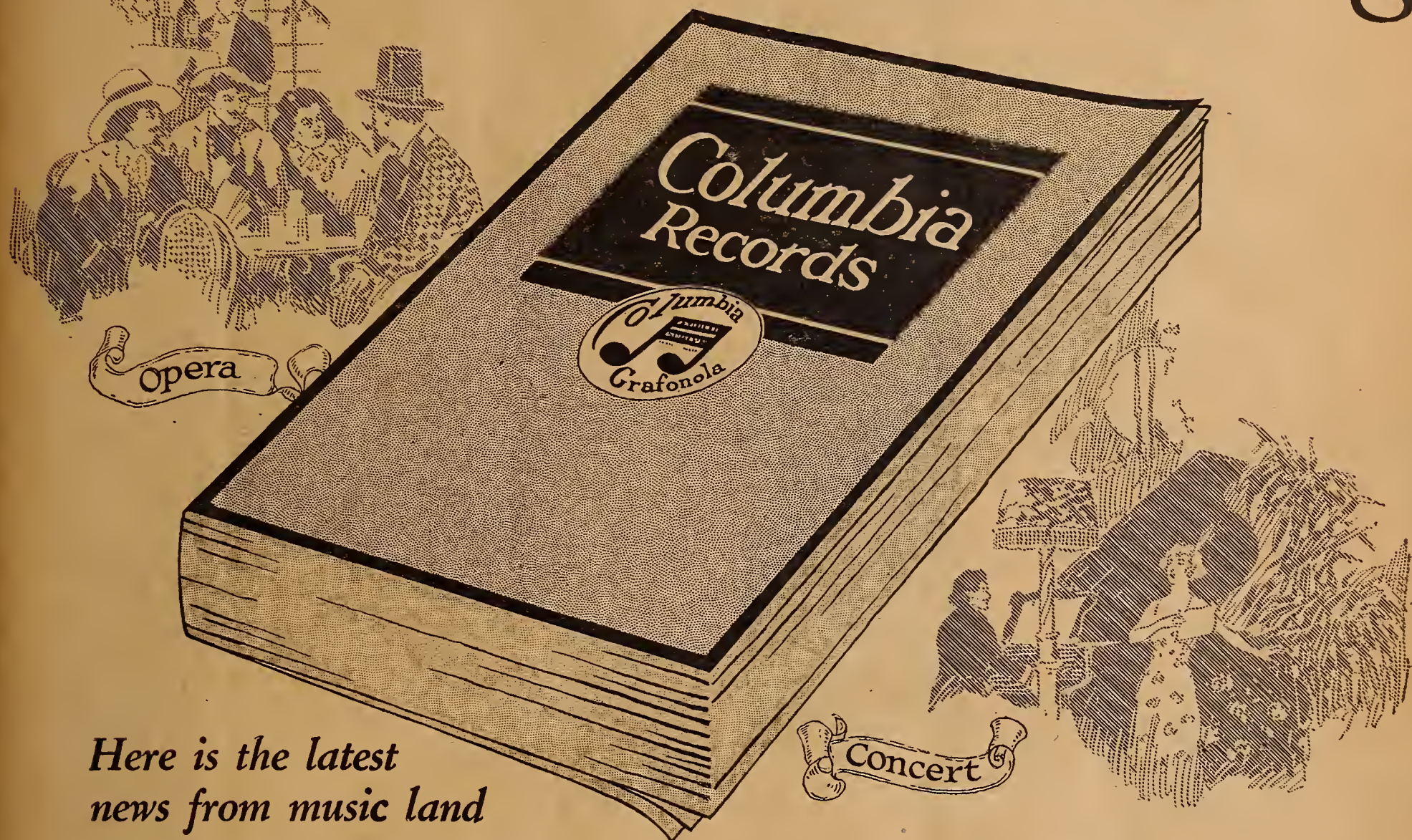
trees with horses without damaging them. The next season I intercropped three rows of potatoes midway between the tree rows, and had the trees dug around by hand. This took weeks and weeks of hard and expensive labor with grubbing hoe and shovel. There must be some better way, I thought, and then the tractor was brought to my attention.

But how could a tractor, large and

wieldy-looking as it seemed, get about this orchard to do the necessary cultivating effectively. I studied tractor literature, and then looked up the machines themselves at work. I wanted something that would turn short, that would not slide down the hillside, and that would not be too small in size to be short in power. I finally decided on the machine shown in the picture. With one guide wheel in front, and the differential turning feature, every row is taken—first on one side, and then on the other. Either drive wheel of this tractor radiates on the other drive wheel as a pivot when either pedal on the differential is locked. I have now worked this orchard for two years exclusively with the tractor. I plow it shallow in the center between the rows, and disk and harrow it both ways. It has not been necessary to run up close to the rows so as to permit the tractor to interfere with extending branches, as the orchard extension disk extends under the branches, and by swinging the movable hitch it enables us to work up within a few inches of the trunks of the trees. The beauty of it is that the tractor will go to the exact point that the operator wants it. No bark is knocked off with doubletrees, nor limbs torn off as horses brush through them. When the tractor clutch is thrown out, the machine instantly stops. Moreover, several operations are done at the same time—thoroughly, and rapidly, and with ease.

Before I owned the tractor the work in the orchard was a problem of steady horses, and that of securing hired help when needed. Now, with the tractor, the orchard work is "fill in" work at evenings after supper, or at any time during the day with an odd hour or two to spare. It is not a proposition of getting team and harness, and all that, but merely of turning over the engine and it is on the job. Then, when through, pull the pin from the hitching clevis, and run it in the shed without feeding or currying. [CONTINUED ON PAGE 74]

New Columbia Record Catalog



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Dancing

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One of the great advantages of Dietz Lanterns for farm use is safety—they are as safe as sunshine.

The base of a Dietz Lantern is made broad and true so that it does not easily tip and the combustion system has been so perfected that no explosion can occur should the Lantern be kicked over in stables or outbuildings. If any of your Lanterns are worn out or broken ask any dealer to show you a Dietz "Cold Blast" Lantern and to explain the combustion system, which produces an extra big, steady white light in all weathers, without blow-outs.

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Largest Makers of Lanterns in the World
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LANTERNS**



A Good Lesson for Us Not to Learn

FARMERS and city people are being brought closer together by the stress of the times and, many believe, for the mutual benefit of both producer and consumer.

The following extract from an article in the "Manufacturers' Record" shows clearly that the thinking people of the United States are coming to a better understanding of the problems of the people on whom they depend for their daily food supply:

"It was the writer's good fortune, or bad fortune, as some may count it, to spend a couple of nights and a day some time ago on a dairy farm 20 miles from Baltimore, and, desiring to keep along with the family life, instructions were given to be awakened in time for the family breakfast. The call came at four o'clock in the morning on a bitter winter day. There was no fire in the room, nor in the house, except in the kitchen or dining-room. Crawling down to the dining-room, half-frozen, the family had gathered for breakfast. When that was over it was still dark, but the farmer and his hands went out to do the milking, which was done by the light of lanterns. The milking finished, the horses were hitched to a big wagon, and a load of milk was taken some three or four miles to the nearest station to catch the early morning train.

"The writer accompanied the driver on the trip, spent a few moments thawing out at the depot stove, then rode back, and was at the farmhouse again before the first rays of the sun commenced to illuminate the earth.

"The next night the same routine, and what this farmer was doing—and he was a man considered fairly well-to-do for the farmers of his section—was only an illustration of what all the neighboring farmers were doing, and what a large proportion of the farmers of the entire country are doing twelve months of the year. The farmhands are doing this all the time, and the farmers' wives are likewise doing it a greater part of the time.

"It is a very well-to-do farmer, indeed, whose income is equal to that of the bricklayer, the carpenter, the railroad mechanic, or the railroad conductor. They have no

such income as these men, though they work from 50 per cent to 75 per cent longer hours.

"The labor unions of the country are, by their example, teaching the farmers that they too should cut their hours of labor to eight per day or less, and, while reducing their working hours and the volume of their product, they should steadily increase their income.

"Imagine for one moment what would happen if the farmers of the country should go on a strike and permit the loss of one wheat crop or one corn crop! There would follow such financial and industrial panic as the world never saw, and civilization would stand face to face with absolute starvation. All the blatant outcry of politicians, all the wild theories put forth in Washington and by demagogues everywhere, all the wild denunciation by newspapers and by the pulpit, would be without avail; the farmer would simply have accepted the lesson which this nation is industriously teaching its people through its forbearance with union labor leaders. The union labor leaders are bringing about a situation which threatens the ability of their people to buy a single pound of food-stuffs except at a price many times as high as that which now prevails, and even then starvation would rule everywhere, for the supply would be wholly inadequate to save millions of people from death by starvation."

When to Feed Sudan

IN REPLY to recent inquiry I would say that in growing Sudan grass on a small scale we have never been careful to avoid feeding the hay from the second or even from the third growth. It is closely related to sorghum, and sorghum under some conditions kills cattle breaking into the field. However, I have never known any injury from the feeding of hay from the second growth of sorghum to any class of animals, though I have made extensive use of the second growth, and even the third growth of sorghum, both as hay and as a soiling crop.

J. F. DUGGAR

How You and the Landlord Can Play Fair

[CONTINUED FROM PAGE 15]

They seem well satisfied with their business arrangement. The more they work the more they make.

Every one of his farms has a set of good scales to see that everything is divided equally. For instance, if a tenant has corn in the crib which is owned by both of them, and wants some of it for seed, he weighs out what he wants, and then weighs out the same amount for Mr. Firkie, so that both will have an equal interest in the crib.

"I own a farm in Ohio," said Mr. Warren, "but I am well satisfied with my ar-

rangement with Mr. Firkie. I make a handsome profit, and am going to stay renting from him. Our lease is satisfactory in every respect, and I make more than some farmers do on their own land."

I had expected that Mr. Firkie had taken considerable time before he arrived at his method of renting land, and that his methods were quite intricate, but when he said it was "common sense" it rather surprised me. Since then I have met other men who have adopted the common-sense method of renting land, and they say that it is a winner.

Prize Contest Announcement

\$15—\$10—\$5

For the three best letters from readers of Farm and Fireside on

How I Became the Owner of a Farm

AFTER all, men like to own their own farms, even if there are good landlords like Firkie. We want to know how you got yours. The harder the struggle you had, and the more you had to scheme and plan to get that piece of land, the more we will be interested in your story. We want the facts about men who accomplished what seemed to be impossible. Just tell it exactly as it happened, and how you did it. Plain facts are all we want, because it is plain facts that will inspire other men to do the same thing for themselves in their own way. Don't think you have to know how to write to enter this contest. You don't at all. The truth in plain words is plenty. Keep within 500 words if you can. Get your letter in before January 26th. Address Farm Owner Contest Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City. We will return unused letters if you enclose a stamped envelope, and ask that we do so.

THE EDITOR.

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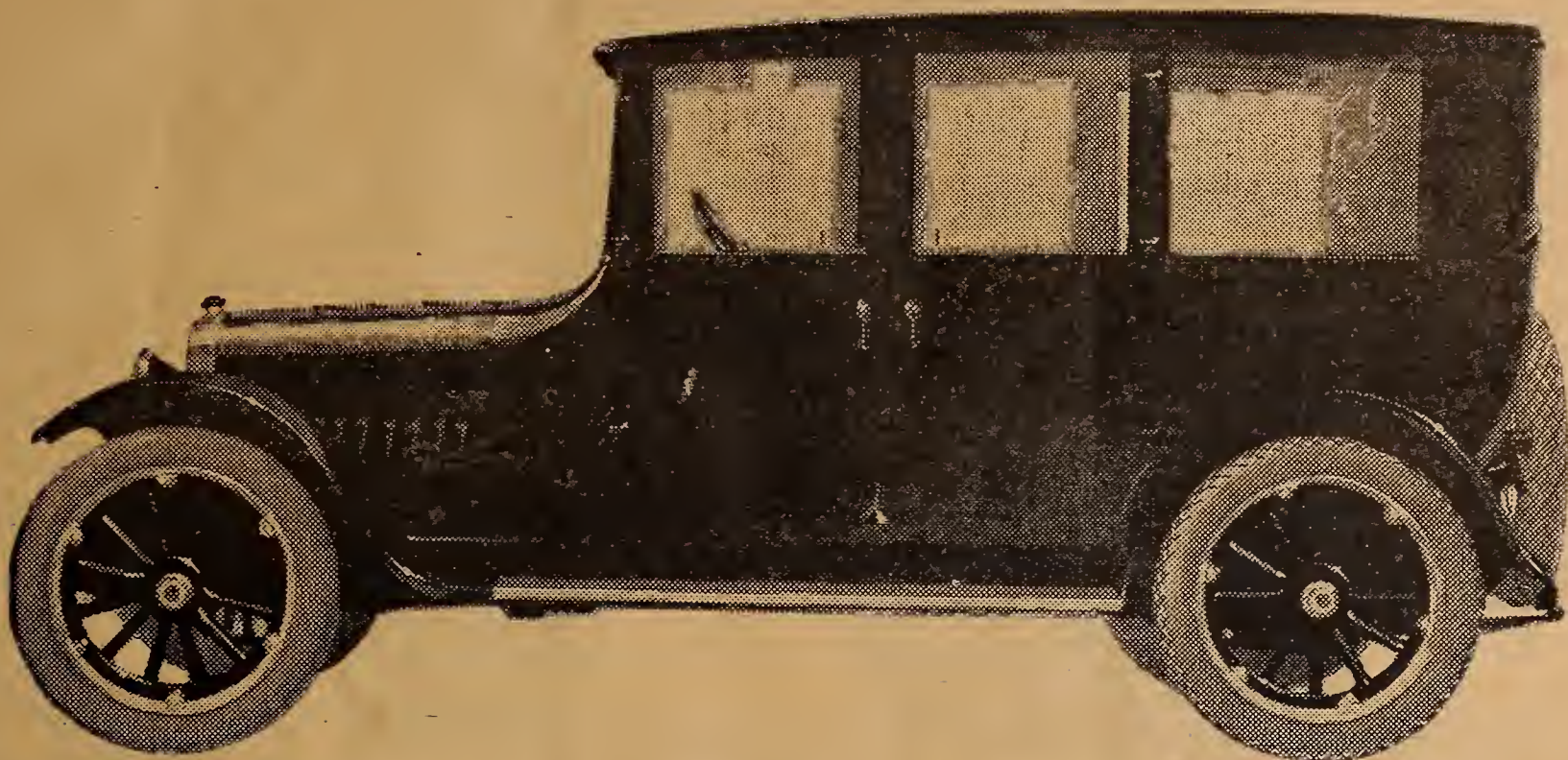
Send No Money! Just send us your name and address, and we will send you "For-do" complete, postpaid, ready to attach. You can put it on in 3 minutes. No changes necessary in car or engine, no holes to bore, easier to put on than plugs. Use "For-do" 10 days Free. If you find it does everything we claim, and you want to keep it, send only \$3. If you are not pleased, just say so—mail it back and no charge will be made. We take all the risk. Send today.

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OAKLAND OWNERS REPORT RETURNS OF FROM
18 TO 25 MILES PER GALLON OF GASOLINE
AND FROM 8,000 TO 12,000 MILES ON TIRES



THIS NEW OAKLAND SENSIBLE SIX FOUR DOOR SEDAN IS POWERED WITH THE FAMOUS 44-HORSEPOWER, OVERHEAD-VALVE OAKLAND ENGINE

OAKLAND SENSIBLE SIX

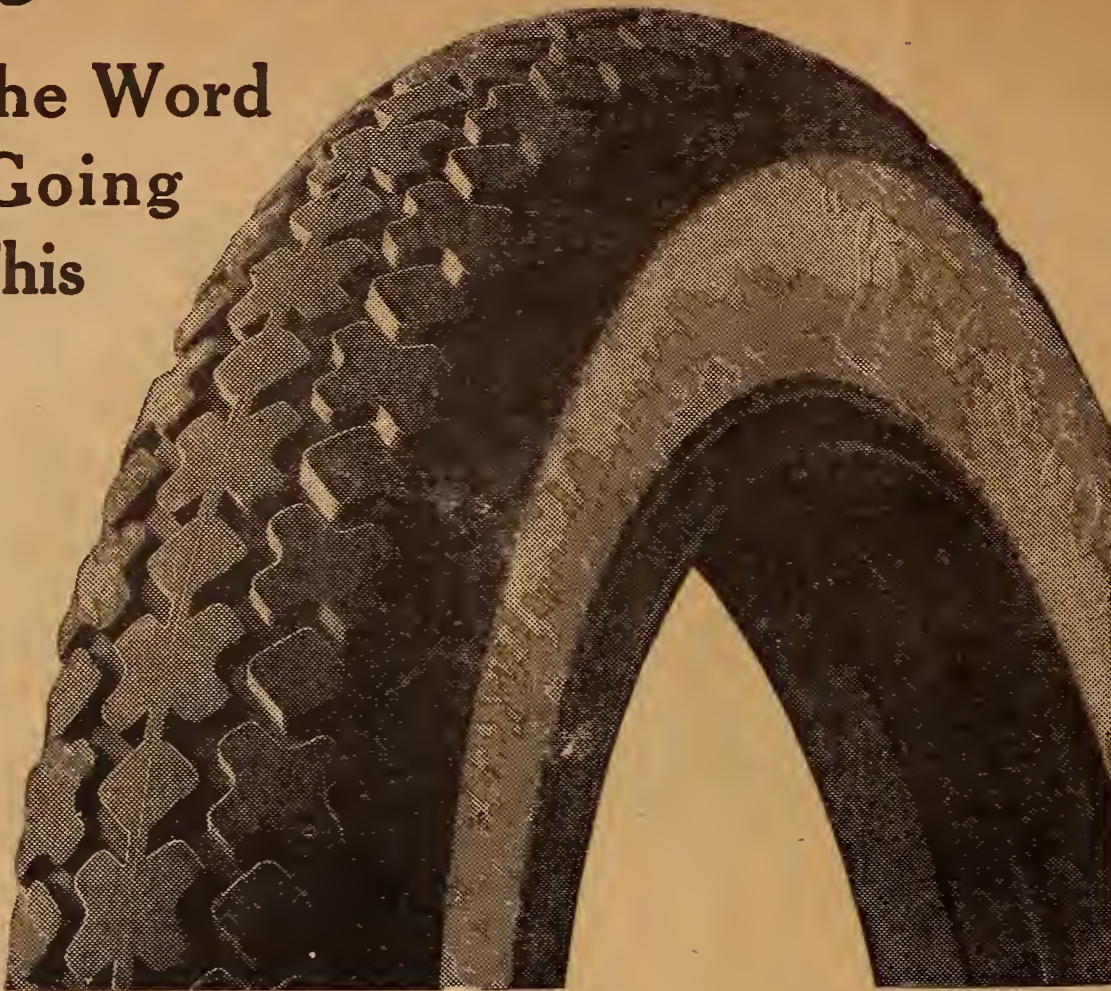
THE present remarkable value of the Oakland Sensible Six four door Sedan as an investment is evidenced in every field in which this competent automobile serves. Day after day, under the most strenuous conditions of service, it is not only delivering performance of the most satisfactory character, but is delivering it at extremely reasonable cost. This pronounced reliability of mechanical action, this economical discharge of every duty it may encounter, in the Oakland Sensible Six Sedan is joined with the unusual comfort that only complete equipment and appointment can give. The way the Oakland performs, the careful provision made in every detail of chassis and body construction for prolonged and capable service, makes the relative worth of this car unrivaled in the present automobile market.

TOURING CAR, \$1165; ROADSTER, \$1165; COUPE, \$1825; FOUR DOOR SEDAN, \$1825
F. O. B. PONTIAC, MICH. ADDITIONAL FOR WIRE WHEEL EQUIPMENT, \$35

OAKLAND MOTOR CAR COMPANY
Pontiac, Michigan

"Buy Firestones"

That's the Word
That's Going
Round This
Year



WHEREVER you go you hear car owners passing the word—"Buy Firestones. They're the best cords this year." The reasons are many, but the conclusion is the same—Buy Firestone Cords.

Read these spoken advertisements for the New Standard Oversize Firestone Cord with Extra Heavy Non-Skid Tread:

"It gives me a lot more service than the mere guarantee."
"Not only fine service but a tire that looks right."

"The extra air gives easier riding."

"The non-skid tread is fine; it holds in all kinds of roads and yet there's no power wasted."

"I bought it because of its extra size and the Firestone reputation."

"You'll notice that you go farther on a gallon of gas."
"It steers easy and grips the road."

With the mouth-to-mouth tire advertising centered on Firestone this year no thinking tire buyer can afford to remain uninfluenced. See your dealer.

FIRESTONE TIRE & RUBBER COMPANY
Firestone Park Akron, Ohio
Branches and Dealers Everywhere

Firestone

Most Miles per Dollar

Flock Facts for You

DON'T overlook any good bets to cut living costs. In every home, no matter how thrifty, there are table scraps and kitchen waste which have feeding value, but which, if not fed, finds their way into the garbage pail. Poultry is the only class of domestic animals suitable for converting this waste material, right where it is produced in towns, into wholesome and nutritious food in the form of eggs and poultry meat.

The specialists figure it this way: Each hen in her pullet year should produce 10 dozen eggs. The average size of the backyard flock should be at least 10 hens. Thus each flock would produce in a year 100 dozens of eggs, which, at the conservative value of 50 cents a dozen, would be worth \$50. For the beginner in poultry-raising the Department of Agriculture has a number of good bulletins. The Illustrated Poultry Primer, a new Farmers' Bulletin, No. 1040, covers the whole field in the simplest language, and is chock-full of good pictures which tell you even more than the type. There are others discussing different phases of poultry-keeping in more detail. A list will be sent on request. H. S.

Michigan Finds Milking Machines Profitable

VALUABLE light is thrown on the problem of dairy costs by the Dairy Husbandry Section of the Michigan Experiment Station, through a survey of 93 dairy herds in that State. The results of this investigation show that, while, on the average, it required 1.42 hours' labor to milk and care for 100 pounds of milk by hand, only 1.12 hours were required where machine milkers were used. This amounts to 29.16 hours' saving per cow per year, a total of 525 hours with a herd of 18 cows, which was the average number kept on the 51 farms using machine milkers.

Figures were kept for the entire year with 93 herds, all of them being in the condenser districts. Had all the herds been producing market milk, it is thought that there would have been less difference, as the better grade of milk would have required more time in cleaning and caring for the milking machines. No report is made of the effect of machine milking on the cows.

What Your Car Does

By Earl Rogers (Ohio)

LAST week a man who is starting to use a silo said that if he had to give up either his car or his silo the car would be the one to go, as the silo made him the most money. Another farmer hearing this added that it would be a poor silo that didn't pay better than a machine. And there you are.

I really doubt if any car will pay so far as actual money is concerned. It is in other ways that it pays—recreation, getting to town quickly, trips to other farms, and so on. I think that the cheapest car to operate will cost four cents a mile, including depreciation, interest, and running repairs. Mine costs close to five cents a mile, and a lot of larger cars cost ten cents or over. But, no matter what they cost, we have them and we are going to keep them, for they are worth all they cost.

There are ways to reduce this cost, however, and I am going to tell you how I do it: Last week I wanted several timbers from a town six miles away. The team was short a shoe and I was short of time. I hitched my wagon and box weighing 2,200 pounds to the rear axle with a short chain, so the tongue couldn't move much either way, and started out. The load weighed probably 1,000 to 1,200 pounds, and I ran mostly on high. The trip took about two hours, including loading. That is one way I make my machine pay for itself.

Then I have a power attachment. I saw what wood we use in the furnace, and also cut the fodder that I feed to the team and cows. I can run a feed grinder, though I haven't bought one for sure as yet. It develops 10 or 12 horsepower on the belt. I used it to fill part of the silo last year, but quit because I was afraid that it would overheat the engine, but I believe now that it would have handled the work all right. It was a 13-inch cutter, and it took a 10-30 tractor to handle it afterward.

From time to time there are other things that will turn up that I want to try out. I doubt if it is practical to plow or harrow with a car, though I see some are doing it. It may come in time, but I think the tractor better for this purpose.



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Virgin lands, unworked. Soil is rich and fertile, rainfall certain. Grows bumper crops of clover, hay, wheat, oats, rye, barley and root crops. Potatoes yielded 225 to 250 bushels per acre in 1919 and sold for \$1.40 per bushel. Ideal country for dairying. Send for our free booklet, "Happy Homes in Happy Land" which gives you all information including certified figures on crops, soil, rainfall and climate. Act immediately—this rich productive land cannot long stay at its present low price. Ask for booklet today, it is free.

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Thirty Million Dollars

*Its Ten Months Sales Record
Reveals Motordom's Appreciation
of the Light Weight Quality Car*

Paid For Essex Cars

Thirty million dollars has been paid for Essex cars by users in the past ten months. It is a genuine endorsement of the new type car. It shows how great has been the call for light weight, combined with durability, performance and comfort.

No mere sales organization could have distributed 20,000 cars in so short a time. It was the car and what users said for it that made this sales record possible.

Sales Multiplied With Every Car Delivered

Remember how little we ourselves have praised the Essex. Our advertising has been limited to invitations to test the Essex and to calling attention to what owners say of it. But wherever an Essex has gone there it has won new friends.

Each time an Essex is delivered in a new locality sales from that section jump to proportions limited only by the number of prospective buyers.

Just think how mighty must be the Essex appeal that it should have won as it has. In every section of the land and in every country Essex has become so familiar that one needs to be reminded that it first made its appearance only a few months ago.

The Essex has won its position because it fills a want that can be supplied nowhere else. It has met no competition. No rival challenges its leadership. There is no car like it. Every Essex owner is its champion. Everyone who has ever ridden in an Essex speaks of its magic spell.

All Because of Its New Type

Consider the type in vogue before Essex came. Light weight cars fell short in performance and endurance. Low cost and economy of operation are their chief appeal.

Durable cars capable of meeting all performance requirements cost too much for the average pocket.

The line was clearly marked. A wide price difference separated the one type from the other.

Then the Essex came with its light weight, low cost and with durability and surprising performance. It made friends and they added their praise.

Now the Skeptics Are Won

Men who never accept new cars are now won by the Essex. They are the type who demand reliability above all else. Months ago you might have heard them express some doubt about the Essex holding up. Some may have thought its motor too powerful. Others felt such a light car would not be practical in hard service.

But no one voices such doubts now. In almost every community you will find Essex cars that have been driven more than 20,000 miles. They scarcely know the repair shop. And their owners will tell you the Essex requires hardly any attention to keep it in fine running order.

Weigh These Facts For Yourself

Doesn't the Essex fill your wants for a light car? Doesn't it perform as well as most large and costlier cars? Where can you match its appearance? Is there anything about the Essex that falls short of your desires in any essential particular? It is easy to drive, comfortable to ride in and can be relied upon for any service.

You have the endorsement of thousands of owners. They have backed their faith to the extent of \$30,000,000. Every week the average sales of Essex cars approaches a million dollars.

The circle of owners is ever widening.

Does not this give Essex first place in your thoughts?

"Know them by the Jet Black Tread!"



WHATEVER the driving conditions, Vacuum Cup Cord Tires are built to give unusual mileage.

Generously *oversize*, constructed of highest quality materials under constant inspection.

A jet-black tread of massive wear-resisting Vacuum Cups gives *guaranteed* safety on wet, slippery pavements, plus positive traction on rough, rutty, rocky detours.

Adjustment basis—per warranty tag attached to each casing:

Vacuum Cup Fabric Tires . . . 6,000 Miles
Vacuum Cup and
Channel Tread Cord Tires . . . 9,000 "

Makers of Pennsylvania Auto Tubes
"Ton Tested"

PENNSYLVANIA RUBBER CO.
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Direct Factory Branches and Service Agencies Throughout the U. S. and Canada.

Pennsylvania
VACUUM CUP
CORD TIRES

WITTE
ENGINES



Simple in Construction
Easy to Operate

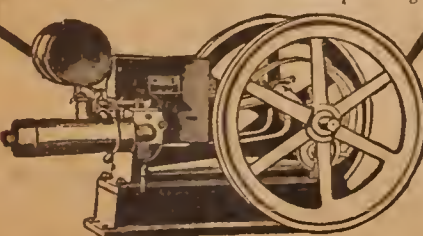
Built in the Largest
Exclusive Engine Factory in
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Quality and Service proven by
34 years' success. You can al-
ways get delivery from Witte,
and the best rig for the price.
Write for latest catalog and

Save \$15 to \$500
On Engines 2 to 30 H-P.

I can furnish you a Stationary, Portable, or
Saw-Rig outfit—Kerosene or Gasoline—or a
Lever-Controlled Drag Saw with all latest
improvements. Witte Engines are regularly
equipped with M. T. battery, or Standard
BOSCH Magneto on order. Lifetime Engine
Guarantee against defect—no strings—no
time limit—no excuses. Tell me what you
want and when you want it. I can ship
quicker than any other factory selling direct.

WITTE ENGINE WORKS

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to GRIND YOUR FEED
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Can be used with Ford, Overland, Dodge, Reo and
Chevrolet 490 cars and Fordson Tractor. Your auto-
mobile has a powerful engine—it will outlast the car
and you might as well save your money and use it to
do all your farm work. No wear on tires or trans-
mission. Hooks up in 3 minutes. No permanent
attachment to car. Cannot injure car or engine.

Friction Clutch Pulley on end of shaft. Ward Govern-
or, run by fan belt, gives perfect control. Money back
if not satisfied. Ask for circular and special price.
WARD MFG CO. 2035 N St., Lincoln, Neb

Is It Best to Buy High or Low Grade Fertilizer?

By Earl Rogers (Ohio)

MOST of us farmers are lame when it comes to deciding upon what grade of fertilizer to use. Especially is this true when it comes to choosing the grade that will be the most economical. This fall I have been selling a little fertilizer among the neighbors, not for profit, but to get our own car in on time, and to get the kind we need.

I have found that many farmers are even less informed about fertilizer grades than I am, and I am just a beginner. But there are some things about grades that are plain to me, and maybe I can help you save a few dollars on your spring buying of commercial fertilizers. That most of us have to use them in order to make farming really pay is admitted quite generally.

This much is certain—very certain. The higher the analysis of the brand that you are buying, the cheaper each unit of ammonia or phosphoric acid or potash will be. It is always true. Just to take a very plain example, and one that shows about as small a difference in favor of the higher grades as any, let's consider a 14 and a 16 per cent grade of acid phosphate. The 14 per cent grade cost last fall \$25.25 a ton. That made each unit of phosphoric acid cost \$1.80. But if you bought 16 per cent acid phosphate, a ton cost you \$26.75, or just \$1.50 more than the 14 per cent goods. A unit thus costs \$1.67, or in other words, you get two per cent of acid phosphate for \$1.50, or 75 cents a unit. Yet in the 14 per cent goods you pay \$1.80 for each per cent. Does that show that it pays?

Here is another example:
1% ammonia, 8% phosphoric acid, 1% potash, costs \$29 a ton.

1% ammonia, 15% phosphoric acid, 1% potash, costs \$35 a ton.

It is plain that outside of the phosphoric acid these two fertilizers are equal. The difference in price between the two brands is just \$6 a ton, and the difference in grade or analysis is seven per cent in the phosphoric acid.

At the rate you pay for a straight acid phosphate fertilizer seven per cent would come to \$13.74. Now compare that \$6 and the \$13.74 and see what you are ahead by this difference in analysis.

Consider it from another angle: Wouldn't it be better to haul less of a high-grade fertilizer out to your farm and use less of it to the acre, and get the same result, than to haul a lot more of the lower grade and use more of it, and not get as good results?

Hauling costs money, and freight costs money. Both these costs are paid by the farmer.

Before the war I bought some of the materials direct, and mixed my own fertilizers for onions. If one has studied that system of buying fertilizers it will show this difference even much better than any comparison that I can make here. There may be a time when we will do this again when an analysis is wanted that is higher than the fertilizer manufacturers offer. A company can give more fertility for the money in the higher grade stuff, as their "overhead" expense is not so high for each unit. Storage, labor, sacks, and shipping expenses all enter into the cost of fertilizer. The less stuff handled, the less sacks used, and the fewer freight cars used, the better the price should be.

A Little Thing Like Losing an Arm Didn't Keep Him From Farming

By L. B. Kilmer

HERE is a note of cheer for those farm boys who come back from France fearing that their wounds would keep them from going back to real farming again. It is the story of John B. Jerome of Indiana, who lost one arm when he was a boy, but who runs his hundred-acre farm just the same.

Young Jerome lost his arm in a railroad accident, and the railroad gave him a life job as a telegraph operator. The girl to whom he was engaged stuck to him after the accident, and married him. Jerome did his work well,

and became train dispatcher at Louisville, Kentucky. But all the time he was saving money to get back to his farm.

So the Jeromes planned and saved, and put their money in land until now they have their "crock of gold" in the shape of a hundred-acre farm where the honeysuckles trail along the fence and the lilacs stand at the gate to welcome friends.

A home in the true sense of the word. A one-armed man is handicapped for some parts of farm work, but the most of it he can do, as Mr. Jerome has proved, and his wife is a staunch helper, especially as to poultry-raising.

Geese are her specialty, and she gives a hint to farm folks who are beginners or who lack capital to buy a flock of well-bred hens and build poultry houses, such as are necessary for laying hens. She says they might profitably undertake goose-raising, for they are such self-reli-



This is Mr. and Mrs. J. B. Jerome, of R. F. D. 7, Laporte, Indiana. Jerome farms 100 acres successfully, despite the fact that he has only one arm. But it's not to be wondered at when you note the determination in that face of his. We like folks with your spirit, Farmer Jerome. The world could use a lot more like you

ant, self-providing creatures. Mr. Jerome does not want to give the idea that farming is a walk-away for anyone, or that there is a fortune in it for all; but he does assert that a man even crippled as he is can fit himself to keep up modern methods and manage help in a way that makes good profits, and gives a home where one can realize the best in life.

He believes in co-operation with his neighbors, in both work and ideas, gleaming out the most intelligent and sensible and the most readily capable of

being carried out at moderate expense. He makes his head work for the hand he lacks, by keen observation and a notebook.

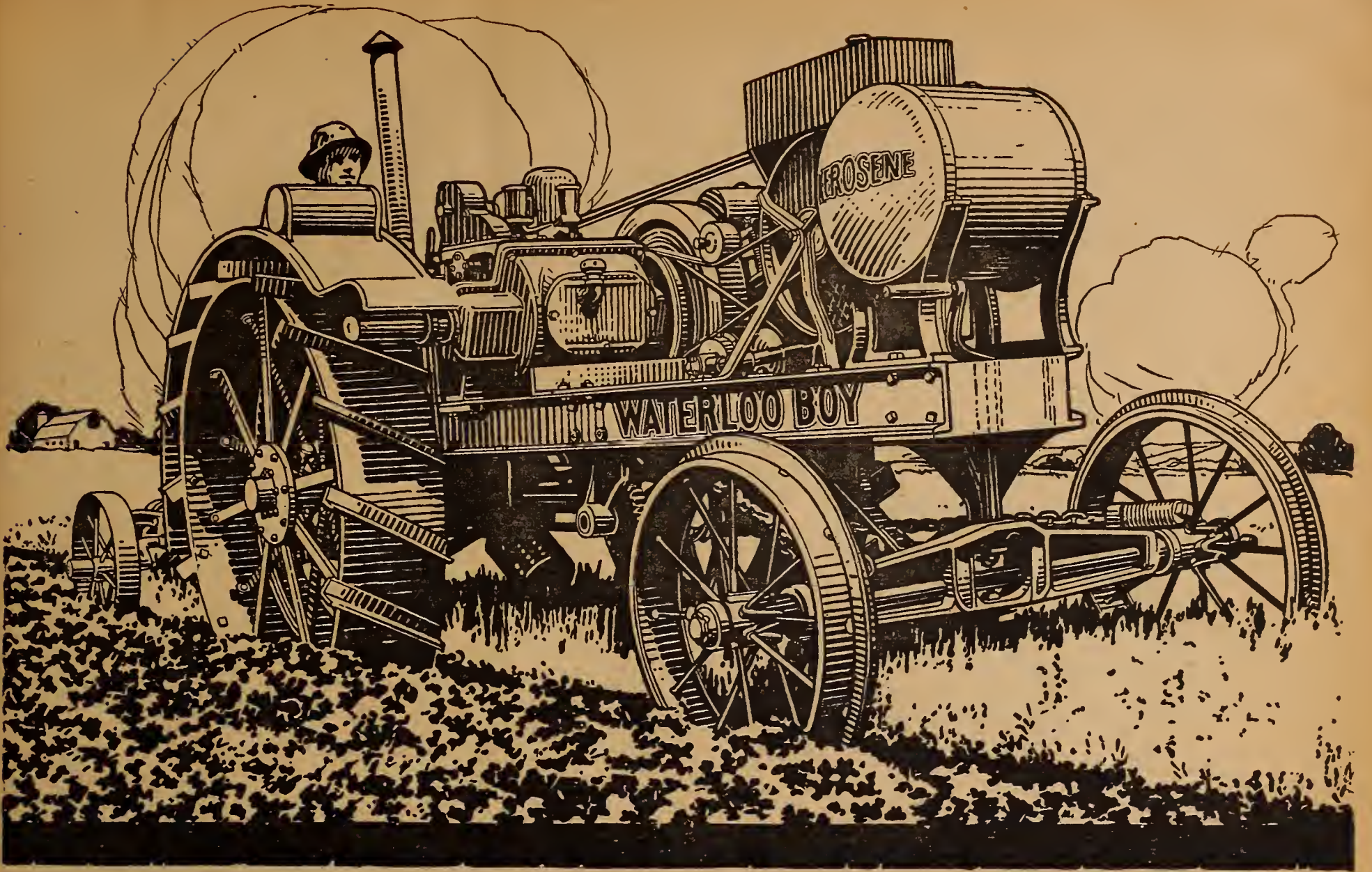
He saves time and money by looking over all tools and farm implements in slack season, and seeing that they are in good working order, and not waiting until the season's work opens up and help is scarce and high in price.

He notes down things new to him that he sees away from home, what he hears at the farmers' institutes, and things that he wants to remember to do at home on the farm.

And he has never once regretted leaving the railroad office to return to the country.

Jerome's favorite quotation is:

The red of courage, the gold of faith
Are woven where'er a man
Looks in the face of misfortune
And does the best he can.



The Service You Want in a Tractor You Get in a Waterloo Boy

The measure of value of any farm machine you buy is the amount of service derived after its purchase. To be the right kind of an investment any machine must "make good" in your hands.

You want a tractor that will do the work you have to do and that will make you money while doing it. A Waterloo Boy meets your tractor requirements. Its purchase means real tractor satisfaction.

WATERLOO BOY BURNS KEROSENE COMPLETELY

A **WATERLOO BOY** combines economy with efficiency. It gives you dependable service at small operating cost. Its twin-cylinder engine develops full 12 H. P. at the drawbar and 25 H. P. on the belt, using kerosene as a fuel. The patented manifold converts every drop of this low-priced fuel into reliable power. Two gallons of kerosene per acre is the average amount used when plowing.

THE PULLEY WHEEL on the Waterloo Boy is mounted on an extension of the engine crank shaft. It is carried on wide, heavy-duty Hyatt bearings. There are no gears in mesh to cause friction. All power goes directly to the belt.

A **PUMP, FAN, AND RADIATOR** cooling system holds the engine at the proper temperature to give you the greatest service. While the motor runs at the right temperature for perfect lubrication, enough heat is main-

tained to insure complete combustion and full power from the fuel. The radiator holds thirteen gallons of water. You don't have to stop in the field every few hours and fill it. That means time saved.

A **DRAWBAR SHIFT LEVER** eliminates side draft on both tractor and tools. By shifting this lever, the center line of pull of the tractor always corresponds with the center line of draft on the plow.

THE WATERLOO BOY is especially strong and rugged in its construction. Its various parts are designed to meet every possible strain. It stands up under the most severe conditions. Every part is easy to get at. The engine runs without vibration. Its well-balanced weight provides proper traction in soft ground. It is built for, and gives you, real service.

Remember that buying a tractor is an important investment. Be sure to investigate thoroughly before you buy. We have prepared a booklet describing the Waterloo Boy fully. Don't fail to get it. Drop us a postal card or letter today. Ask for Package W. B. 111.

JOHN DEERE, Moline, Illinois

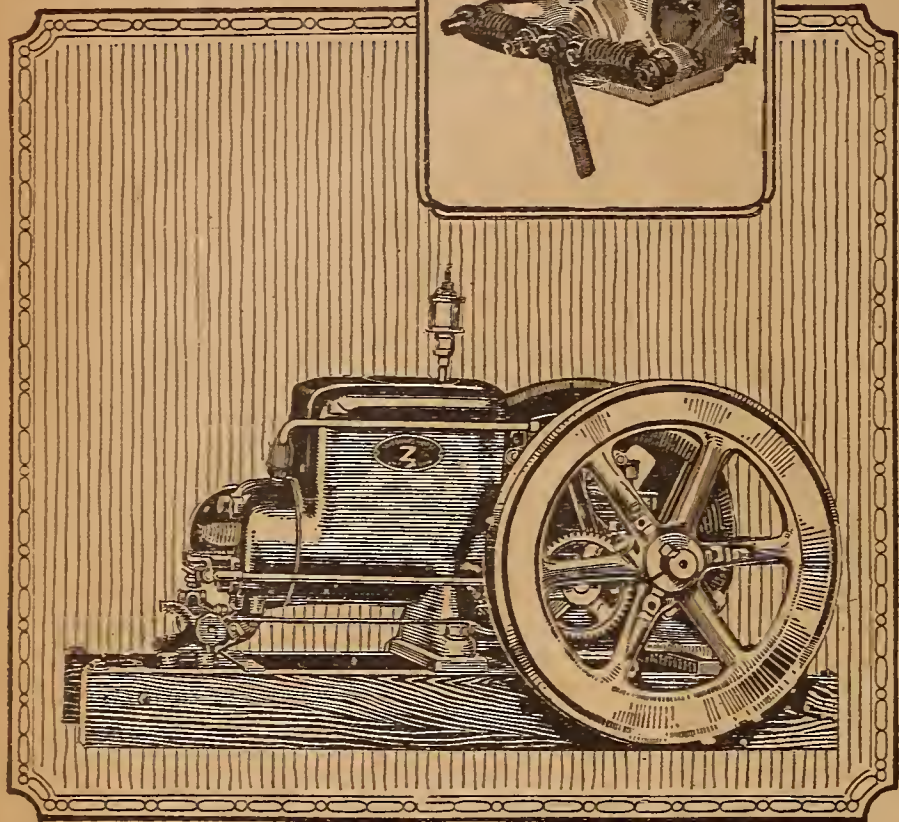
JOHN DEERE



THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

The Greatest Combination

**Fairbanks-Morse
"Z" Engine with
Bosch Magneto**



WHEN the full meaning of this "Z" message is realized—mighty few farmers in America will fail to at once call on the nearest "Z" engine dealer. ¶ This example of master engine-building must be seen. ¶ Type and pictures can but suggest this value establishing achievement. ¶ By adding this one possible betterment—Bosch high tension, oscillating magneto—we complete a rare engine service, fully maintained by over 200 Bosch Service Stations in co-operation with every "Z" engine dealer—for all "Z" engine owners. ¶ Prices—1½ H. P. \$75.00—3 H. P. \$125.00—6 H. P. \$200.00—All F.O.B. Factory.

Fairbanks, Morse & Co.

MANUFACTURERS CHICAGO

100 A., \$3300; with Pr. Horses, 8 Cows and Bull, tools and implements, hay, fodder included for quick sale, easy terms. Convenient R. R. town, high school, 6 churches, creamery, markets, 50 acres fields, 16-cow pasture, wood, fruit, 9-room house, large barn, granary, corn, poultry, hog houses. Details this unusual bargain page 22 Strout's Fall Catalog, 100 pages Farm Bargains 23 States; copy free. STROUT FARM AGENCY 150 DP Nassau St., New York.



Free Catalog in colors explains how you can save money on Farm Truck or Road Wagons, also steel or wood wheels to fit any running gear. Send for it today. Electric Wheel Co. 13 Elm St., Quincy, Ill.

Big New Stump Puller Book FREE

Tells the Cheapest and Easiest Way to Clear Your Land!



Write for the book today. Read how Kirstin scientific leverage enables ONE MAN ALONE to pull big, little, green, rotten, low cut, tap rooted stumps—also trees, hedges or brush. No horses or extra help needed. No digging, chopping or other expense. The Kirstin is lowest in first cost—lowest in operating cost. Soon pays its cost in Bigger Crops, and Increased Land Value. It adds thousands of dollars to profits each year. Write for the New FREE Book Now!

Kirstin ONE MAN Stump Puller

The famous Kirstin is made of finest steel. Guaranteed 3 years against breakage—flaw-or-no-flaw. It weighs less—Cost less. Yet has greater speed, power, strength, and lasts longer. A few pounds on handle exerts tons on stump. Single, double, triple power. Several speeds. Low speed loosens stump. High yanks it out quick. Patented quick take-up for slack cable. Easily moved around field. A WONDERFUL SUCCESS.

Try It 30 Days FREE!

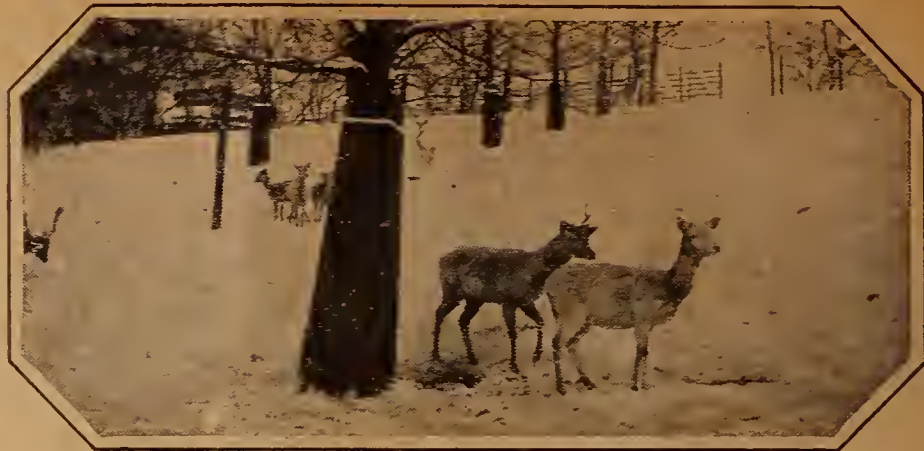
Send no money. Simply send for your Kirstin on my "no risk" offer. See how easily One Man Alone handles biggest, toughest stumps. Give it Every Test. PROVE all my claims. If satisfied, keep puller. If not, return at my expense. No risk to you. Six months to pay. Write for the big new FREE Book today. A. J. KIRSTIN, General Manager.

A. J. KIRSTIN CO., 2105 Lud St., Escanaba, Mich.

SHIPPED from Escanaba, Mich., Portland, Oregon, Atlanta, Ga., So., Canada

Western Address 199 East Morrison St. Portland, Oreg.

WORLD'S LARGEST MAKERS OF STUMP PULLERS



THE deer in the picture are not in the wilds of Maine or the Rocky Mountains, as one might suspect, but are among those kept in the Zoo at Cincinnati. They do not seem to mind the snow or cold weather, but, on the contrary, seem to be enjoying it. Deer make very fine pets, and many stories are told by hunters and frontiersmen of their intelligence and friendliness to man, once they have been domesticated.

How to Make Spring Lambs

By John Pickering Ross (Illinois)

IT IS good for the farmer that within the last few years he has learned a great deal about the breeding and raising of the mutton breeds of sheep. It is also good for the dyspeptically disposed American city dweller that he has discovered that mutton, and more especially lamb, are not only very toothsome but also very digestible meats.

At the present time the thoughts of the provident owner of a flock of sheep will be turned to considering how he shall best provide for and eventually make the most money out of the lambs which will come between Christmas and February. He probably knows that somewhere close to 145 days will elapse before a ewe lambs, and he may pretty safely reckon on an average of a lamb and a half from every ewe in a well-bred flock of any of the mutton breeds.

One of the peculiarities of lambs is that they are likely to be worth as much actual cash, or even more, when they are ninety days old as they will be as yearlings. This should be especially borne in mind and acted on so as to command the high prices which prevail early in April, when lambs for Easter are in greatest demand.

What is done for the lamb is not so important as the care and liberal feeding of the ewe. The ewe must be regarded as the machine through which the lamb will obtain the qualities that will enable it to top the spring markets.

We will suppose, then, that your lambs are beginning to come about the end of January. Your great danger now will be that you will get scared at the high prices of foodstuffs, and fancy that the ewes can get along all right on a little extra hay and

some stuff out of the silo. Possibly you may have foreseen this and provided a few acres of winter rape or rye, which, if proper precautions are taken to avoid the danger of bloating, will go a great way to lessen the feed bill. But if the best is to be made out of these lambs, no scrimping in the feeding of the ewes must be thought of. The small amount of bran, linseed meal or cake, crushed oats or corn in whatever form they seem most to enjoy it, or of a mixture of any of these, with as much meadow or clover hay as they will clean up, fed to them daily for the eighty or ninety days while their lambs are being prepared for the spring market will make it nearly certain that the lambs will come to the spring market ripe and fit to secure the best prices offered at the time. I look for good prices this April.

If the weather is at all severe it may be necessary to yard them from January to April. In this case, ample covered shed room should be provided. Sheep can endure, and even enjoy, a considerable amount of cold, as long as they are kept dry and free from drafts. It is most desirable that the yard should open on to a pasture lot, be it ever so small, so as to provide exercising room for the ewes and a playground for the lambs. Anyone who has enjoyed watching their capers knows that they play games just like boys, and generally an old ewe or two act as starter and umpire of their races. Possibly, if they improve in other respects as much as they have of late years in breeding, we may find them playing base ball. It is really impossible to conjecture how far careful breeding will go to improve sheep.

Rattles Don't Tell Age of Rattlesnake

ANOTHER ancient belief shattered by science. The number of rattles a rattlesnake has is determined not by his age, but by the number of times he sheds his skin, is the decision given out by Raymond Lee Ditmars, who has charge of the reptiles in the New York Zoo. A baby rattler is born with only a button, but soon afterward he sheds his skin and has a rattle. Every time he sheds his skin he gains another, and he usually does this three times a year, although seasonal or food conditions may vary this.

"The rattle is rather a delicate organ," writes Curator Ditmars. "The snake wears out the older rings dragging them around over rough, rocky ground. A rattle seldom attains a length of more than 10 or 11 rings, as when that number has been acquired the vibration at the tip, when the organ is used, is so pronounced that additional segments are soon worn, broken, or lost."

Selling Farm Products

By P. C. Henry (North Carolina)

DOES advertising pay? It certainly does or we would not see the ever-increasing amount of space used in magazines, in dailies, and in the farm press.

The average business man is thoroughly convinced that publicity does pay, because

he has tried it out frequently. But the average farmer is not convinced that publicity will pay him.

I well remember the first time I used space in my county papers. I thought the money was thrown away, but in due time I began to get inquiries, and sold the products I had advertised, at a good profit. And after the ice has once been broken it is the natural thing to go right ahead and advertise every time one has anything of value to sell. But with many farmers the difficult thing is to make a start in the way of advertising their products.

Advertising is the same sort of investment that poultry feed is. Feed is brought to grow the chicks to sell, and advertising space is bought to let the people know you have them for sale. Very few poultrymen can sell their birds, no matter how good they are, without first advertising them. The neighborhood in which he lives may not need his surplus stock, but in the adjoining county or in the next State people may be looking for that very stock.

Recently a neighbor had a promising young horse he did not need. He passed the word among his neighbors, but no buyer appeared. After some time he placed a 20-word advertisement in his county paper, costing him but one cent a word, and before long a buyer appeared.

I have found that when replying to the letter of a prospective customer it will help greatly if one has a small photo of the stock or poultry advertised. The investment of a few dollars in a camera will soon be returned in many ways.

Why 10,000,000 Hogs Brought Bigger Market Prices

They
were put
in tip-top
condition
and kept that
way by HOG-TONE

I raise hogs myself. A lot of them—just for market—every year. Something like four years ago I began to use the formula that is now known as Avalon Farms HOG-TONE on my feeders. Results were good—about 100% better than I expected. Even my veterinary was surprised—although he expected a whole lot more than I did. I kept on giving this liquid medicine to the hogs and saying nothing, until neighbors began to ask me, "What do you give your hogs, anyway, Gandy? Are you just lucky or are you giving them some stuff that makes them take on fat so fast?"

Of course, that started me giving some of the "stuff" to my neighbors. And before I knew it, I had to open up a laboratory in Chicago—where I could more easily get expert chemists to properly prepare my formula. That was just three years ago last September. And I tell you frankly, fellow hog raisers, I am mighty proud of the fact that over 10,000,000 hogs all over this country—in every state where farmers are noted for their hogs—have been fed HOG-TONE and that it has helped their raisers make more money every year since I started in this business. I am particularly proud of letters like this coming from my friends who are raising hogs:

Made my hogs gain 70 pounds in 42 days

"I have used Avalon Farms HOG-TONE for six weeks and am well satisfied. My hogs weighed 70 pounds on an average when I began feeding HOG-TONE, and I delivered them April 22nd and they averaged 140 pounds each."

EMMET KNAPP, Westby Wis.

Now, either this medicine will make money for you in extra hog-weight and top-notch killing condition at market time—or it won't. Now, how are you going to find out? You don't want to risk anything. I don't blame you. I don't want you to risk a cent. Let me do that—for I know what HOG-TONE will do for you.

Let me send you all the

AVALON FARMS

(Registered U. S. Patent Office)

HOG-TONE

that ALL your hogs will need for 60 days—FREE

Saved His Hogs

"I think HOG-TONE is fine. I had three hogs which I had thought were going to die but they are nice thrifty fellows now."

Jacob Morrow, Parnassus, Pa.

Makes 30 to 40 lbs.
Each

"Have been feeding AVALON FARMS HOG-TONE since January 22nd to three pigs which were born the last of October. They had not been doing very well up to the time I started feeding the HOG-TONE, but since they have been growing like weeds. One of my neighbors got some pigs from the same litter as mine. He was looking at my pigs last week and said they beat his by thirty or forty pounds each. He said he would send for AVALON FARMS HOG-TONE as it made quite a difference in our pigs. I will always put in a good word for AVALON FARMS HOG-TONE whenever I get the chance. Anything I can say for the HOG-TONE I will say gladly."

Thos. D. Lesnett, Jr., Bridgeville, Pa.

Send me the coupon below and I will send you one \$1.00 bottle of HOG-TONE for each five hogs you own—enough to treat them all for 60 days or more. If, at the end of 60 days, you are not perfectly satisfied that HOG-TONE has given you a fine profit

Over 50,000 hog raisers have accepted this generous offer —and profited BIG! WHY DO YOU HESITATE?

If you were risking any money—that would be another thing. But—remember—I take all the risk. And I know that you will be mighty pleased with the 60-Day Trial of HOG-TONE because HOG-TONE so splendidly aids digestion and cleans out worms. It gives hogs tremendous appetites, makes them thrive and

in extra pork, don't pay me a cent. Remember, this is the same offer I have made continuously in this and every other farm paper, and if HOG-TONE didn't make good I would have been compelled to go out of business long, long ago.

put on firm, clean flesh at an astonishing rate. Guaranteed to make them put on more pork with the same feed. Hog raisers and breeders everywhere declare it is the finest medicine for hogs, sows and young pigs (especially runts) that they ever used. Why not try it on your herd? You can't lose.

Let me make this plain! Send NO MONEY with coupon!

I want to send you all you need for all your hogs—and take your word for results. Now—here's the coupon. Why not give HOG-TONE a trial at once?

W. O. Gandy, President, AVALON FARMS COMPANY, 382 West Ohio Street, Chicago, Ill.



Thankful for HOG-TONE
"Am well pleased the way AVALON FARMS HOG-TONE worked on our pigs, as they were very bad when I got it. Lost one the next day after I got the medicine. It was gone too far to do any good. Only got one dose in it till it died but the rest are doing fine, getting fat and nice. You do not know how thankful I am for something that will build up a hog so quickly."

Jacob E. Bupp, Dillsburg, Pa.

Well Pleased with Results on Fattening Hogs
"I am well pleased with the results I received from a lot of fattening hogs that I tried AVALON FARMS HOG-TONE on."

Nilo Bowers, Napoleon, Ohio

Rapid Gains from HOG-TONE
"I received and commenced feeding AVALON FARMS HOG-TONE to my 20 pigs the 20th of December last. Eight of these pigs were born July 16th. I sold them January 30th at an average of 106 2-3 pounds. 12 of them were born August 15th, and I sold them today at an average of 100 pounds each. I never saw hogs do any better considering the extremely severe weather we had during this feeding period, and I feel no hesitancy in another order in the near future."

E. M. Woodworth, Milford Center, Ohio

----- I DON'T WANT YOU TO SEND A CENT WITH THIS COUPON -----

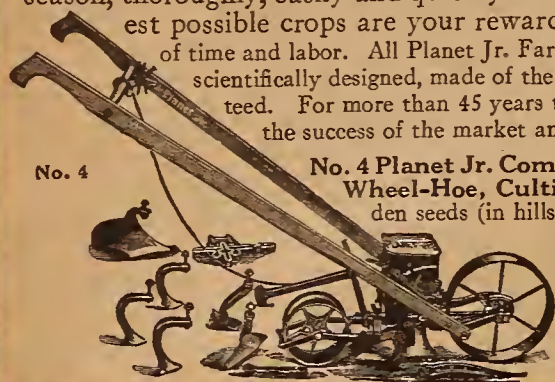
W. O. Gandy, President
AVALON FARMS CO., 382 West Ohio St., Chicago, Ill.

I have _____ hogs. Ship me immediately enough Avalon Farms Hog-Tone to treat them for 60 days. I am to pay nothing now except transportation charges. I agree to report results to you at the end of 60 days and pay for the Hog-Tone at that time if it has done all that you claim. If it does not, I will return the labels to you and you agree to cancel the charge.

Name _____
(Please Print Name)
P. O. _____
R. R. No. _____ State _____
Shipping Point _____
Name and Address of my Druggist _____

Seed Is Expensive Planet Jrs. Help Save It

The No. 4 Planet Jr. shown here sows seed accurately and economically. It also takes care of the growing crops throughout the season, thoroughly, easily and quickly cultivating them. The greatest possible crops are your reward and at the least expense of time and labor. All Planet Jr. Farm and Garden Implements are scientifically designed, made of the best material and fully guaranteed. For more than 45 years they have been a large factor in the success of the market and home gardens of the country.



No. 4 Planet Jr. Combined Hill and Drill Seeder, Wheel-Hoe, Cultivator and Plow sows all garden seeds (in hills or drills), plows, opens furrows and covers them, hoes and cultivates them all through the season. A hand machine that does the work so thoroughly, quickly and easily that it pays for itself in a single season.

Planet Jr.

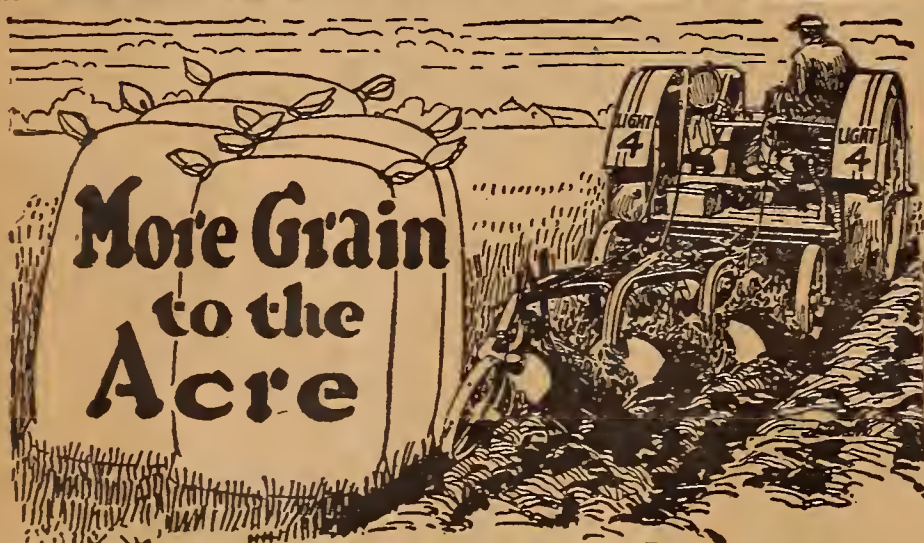
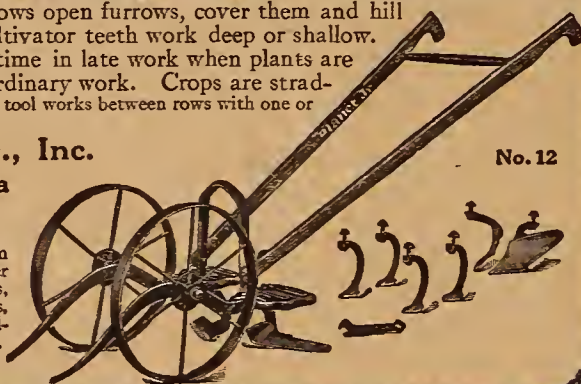
No. 12 Planet Jr. Double and Single Wheel-Hoe has hoes that are wonderful weed killers. The plows open furrows, cover them and hill the growing crops. The cultivator teeth work deep or shallow. The leaf lifters save much time in late work when plants are large or leaves too low for ordinary work. Crops are straddled till 20 inches high, then the tool works between rows with one or two wheels.

S. L. ALLEN & CO., Inc.

Box 1107F Philadelphia

FREE 72-page Catalog

Illustrates tools doing actual farm and garden work and describes over 55 Planet Jr. including Seeders, Wheel-Hoes, Horse-Hoes, Harrows, Orchard, Beet and Pivot-Wheel Ridding Cultivators. Write for it today.



You get a bigger yield on every acre when you prepare the seed bed with

12 H. P. on
Draw-Bar

25 H. P. on
Belt Pulley

**THE
HUBER
Light Four**

Draws three
bottoms

Turns an acre
an hour

Plows more deeply. Discs and harrows more thoroughly. And it gets the work done quickly when the soil is just right. The increased yield pays back the cost of the tractor in a little while.

Because of its simple power-saving design, and the nice balance between power and weight, the Huber Light Four gives you more work to the gallon of fuel used.

All spur-gear-drive to the draw-bar converts the highest possible portion of the power developed by the motor into useful work. High test alloy steel makes the tractor light—it will not pack plowed ground; center draft conserves power; high wheels roll easier and provide greater traction grip.

Huber simplicity is the mark of experience in tractor building. It explains the Huber reputation: "It always keeps running"—and farmers above everything else must have reliability. Write now for "The Foundation of Tractor Reliability."

The Huber Manufacturing Co.
653 Center Street Marion, Ohio

Canadian Branch: Brandon, Manitoba

Makers also of the famous Huber Junior Thresher
Some good territory still open for live dealers

Weight 5,000 pounds; pulls three 14" bottom plows; Waukesha, four-cylinder motor; Perflex Radiator; Hyatt Roller Bearings; burns gasoline, kerosene or distillate; center draft; two speeds, 2 1/2 and 4 miles per hour.

How to Mend a Water Jacket

By Chas. E. Richardson

I REMEMBER one day, the early part of last winter, I drove over to a neighbor's to help saw a lot of wood. He had quite a pile, and was anxious to get it sawed before the cold weather came. For this reason he had hired a crew of men to hurry it along, but even then it would take a couple of weeks to get it in shape. As I drove into the yard he hailed me:

"It's all off!"

"What's the trouble now?" I asked.

"Oh, I did not draw the water out of the engine last night, and the water froze and cracked the water jacket. Now I suppose I must send off for a new cylinder and wait a week before I can run the engine again."

"Let me look at it," I asked. "Can't it be fixed?" and we walked over to where it was standing.

I found that it was the outside that was cracked; in fact, it is very seldom that the inside wall is cracked by freezing.

"I saw a fellow fix a crack of that sort once," I told him, "and if you do not mind, with your help, I'll see if I can do the same—that is, if you have the things to do it with—they are generally around a farm workshop."

We went into the shop, and I looked around and managed to find the tools and materials with which I thought we could do the repairing.

We went back to the engine, and the first thing I did was to cut a V-shape mark along the edge of the crack, from one end to the other, with a cold chisel. Then I took a sheet iron plate and cut it so that it covered

the crack and extended over each side and over the ends about an inch. I then placed it on the cylinder, and tapped it lightly with a hammer to shape it so that it fitted snugly. Next I drilled a row of holes about an inch apart along the edge of the plate, large enough to let some machine screws go through. Then I placed the plate in position over the crack, and through these holes drilled holes to correspond in the cylinder jacket. These holes I made a size smaller than the holes in the plate. Then I threaded these with a tap.

After that I put some paste made of white lead in the crack, and covered some asbestos wicking with white lead and placed that directly over the crack, letting it stick over the sides and ends. I took a piece of asbestos sheeting, cut it out the size of the plate inside of the holes that were drilled on the edge, soaked it in water, and placed it over the crack with the wicking already in it, and fastened the plate down solid with the screws. I took a file and smoothed the patch down.

If the engine had been a new one I should have scraped all paint that would have been on the cylinder off first, but as this engine had no paint on the cylinder I did not do that. So with a couple of small drills, a tap to thread the holes, some screws, an iron plate, a screw driver, a cold chisel, asbestos, and a little white lead, I mended the crack and saved the expense of a new cylinder, and, what was more valuable, the time that it would have taken to get the repair parts.

Prize Winners in "The Way We Made Over Our House" Contest

First Prize, \$50

Mrs. C. G. Willcox

R. F. D., North Norwich, New York

Third Prize, \$10

Vonna Fitzgerald

R. F. D. 3, Coloma, Michigan

Second Prize, \$25

William C. Smith

Delphi, Indiana

Fourth Prize, \$10

Maude E. Leedy

Sherwood, Oregon

Fifth Prize

Mrs. Emma A. Melchior

R. F. D. 1, Box 238, Paso Robles, California

The first of these letters will be printed in FARM AND FIRESIDE probably in February. The others will be printed during the spring.

Do You Guess at Costs, or Do You Know Them?

By Russell Adams (Oklahoma)

TO ME farming is a game. Some of us play it as a game of chance and lose. Other farmers play it as a game of skill and win. Those who win use their brain as well as their hands. They realize that bumper crops alone do not insure success.

The successful farmers of any community are the men who study costs as much as they study production. We must know what anything we produce costs before we can sell that product successfully.

Among other things the farm motor truck has set us thinking about cost of production. With the team method of hauling it was so easy to gloss over the expense account with the mistaken idea that, as we had teams, wagons, horses, harness, hired hands, etc., it did not cost us much to perform any farm operation. We had a hazy idea that it probably cost us something to haul a load to town, but we did not take the time to figure it out.

It costs a certain sum to make a pair of shoes, a gun, or a lamp. It also costs a definite amount to cut down a tree, to plant an acre of corn, to deliver a load of produce in town, or to build a mile of fence. The shoemaker, the gunsmith, and the lamp manufacturer know to the fraction of a cent what it costs them to place their finished product in the hands of the dealer, but how many farmers know what it costs them to put their product in the dealer's hands.

Because gasoline, tires, repairs, depreci-

ation, and insurance cost money, one soon learns to figure the operating costs of a farm motor truck, and once started in this fascinating game we continue to use our pencil until we know to a penny what our various farm operations cost us.

Nine times out of ten a thinking farmer is a successful farmer, and a successful farmer is one of the most successful men in the world to-day.

When we first began to use motor trucks on our farms we farmers had an idea that about the only saving effected would be the saving of time, but we wanted to know for certain, so we jotted down expense items and ton-mile haulage in our log books very faithfully, and when we struck a balance we got the surprise of our lives—hauling by truck only cost half what it cost to haul by team! After that we sharpened up our pencils, and figured the cost of other farm operations until we knew exactly where we stood.

The motor truck brought the six-ton platform scale to our farms; we were curious to know what our loads really weighed. We had an idea that "guess weight" was as expensive as had been the team-haul method of delivery.

The income tax gets much credit for putting farming on a business basis, but this is a mistaken idea. We motor-truck farmers were keeping books before we thought of paying an income tax, and that is why we pay this tax.

How Two Poor Men Built a Good Farm and a Modern Home Without Capital

By F. E. Brimmer



This is S. J. Upham, the father, and F. H. Upham, the son

THIS is the story of how S. J. and F. H. Upham (father and son), good farmers of Madison County, New York, took a good-for-nothing place up there, and in seven years made it as comfortable as any city home, and as successful as any business concern of similar size. They are dairymen.

I want to tell you this story because there are still folks who say they are so poor it is impossible for them to find any way of making their farms successful and their homes comfortable. Talking about this very "can't-afford-it" excuse, F. H. Upham, the son, said to me:

"We might be burning kerosene oil to-day, and I suppose we could have saved 'money' by using a drilled well and heating by wood stoves. The bathroom might have been considered a luxury, as well as the motor cars in the garage and a lot of other things like the fireplace in the parlor. But, just the same, we would rather use our money, not as an end, but as a means to obtain for our families every convenience of which the city dweller can boast."

The farm is a glowing proof that it pays to improve your property, for it is worth almost ten times what it cost.

Thirty years ago the Uphams rented the farm with all tools and stock on it. They were in debt, and had nothing to begin with. The farm was run-down and needed pioneer work to get it in shape.

By farming by the three L's, the debts have been canceled, the farm paid for, and merchandise and several thousands of dollars put by. There is every modern improvement on the place. The three L's are Lime, Labor, Live Stock.

THE Elmwood Farm was first rented for seven years, at \$500 a year. At the end of the renting period the farm was purchased for \$4,500, including stock and tools, the 250 acres being valued at \$3,500, the exact sum paid in rent for seven years.

The soil had been brought up. The addition of new building conveniences at once began. Eighty rods from the buildings was a good spring. This was piped to the house and barn. Every water bucket in the cow and horse barn is automatically kept filled with this pure water. It supplies the houses, garage, milk house, and has enough left over to fill a large water trough along the highway, which runs between the two barns.

The overflow from this and nearby springs was dammed back 50 rods from the barns to form a first-class ice pond and drinking pool for the stock. The result of this water supply, with a head of 40 feet, is a large ice house conveniently located near the cow barn and milk house, as well as running water of the coolest possible in the hottest weather that may be drawn from a hundred taps located at every conceivable place about the home and buildings. A hot-water tank attached to the kitchen range gives the kitchen and bathroom hot and cold water.

The Upham theory has been to make the farm as sanitary as the city, and hence a model bathroom, complete even to shower bath, has been installed, with a septic tank to take care of the sewage.

All food is kept cool in a spacious refrigerator that is supplied during hot weather with ice taken from the pond.

In every building are acetylene-gas lights, electrically lighted by a push button, so no matches are used anywhere. The tank that generates the gas is located in the engine-room at one end of the cow barn. This lighting system also operates a gas range in the summer, when too warm for keeping a fire in the kitchen range. Half of the furnace chimney forms the flue for a brick fireplace.

Heating in winter is done with a pipeless furnace. The big garage is finished on the second floor with living-rooms for the hired men, and is heated by a wood stove that once was in the house. Double windows and walls well made keep the stock warm in their quarters. A good ventilation system is used on all the buildings for poultry or live stock.

The cow barn is 36 by 100 feet, and has a silo that is 18 by 30 feet. The barn and silo accommodate 50 head of Holstein cows. The milker is operated by a small gas engine that also runs a buzz and drag saw, turns the grindstone, and does all sorts of work like running the corn cutter in silo-filling time.

THE success of this model farm, which brings every convenience of living into everyday use, has depended on the use of half a carload of lime each year to produce the heavy clover crops that have helped make the milk checks big. The big silo is filled to capacity with corn, millet, and a layer of the second-crop clover. An average of 100 tons of hay is cut each year, including several acres of oats and peas cut for hay.

The second reason for the success of this or any farm, so the Upham theory has it, is intelligent labor. Not drudgery, but thoughtful labor of the best. In the tenement house a hired man with family is quartered, while the rooms over the garage accommodate two unmarried men. With these men on hand the year round the Upham farm is run at maximum speed.

The third of the three L's is live stock. This is made up of an average of 50 Holstein cows and young stock, with Barstow King Pontiac 85187 master of the herd. Each year a carload of bran, gluten, and oil meal is purchased to supplement the fodder and hay raised on the farm, and the live stock is given the best care possible.

Oh, I tell you, folks, it *can* be done, by anyone anywhere, if we'll just dig in intelligently and do it.



And this is the place they built from nothing but a full stock of determination, a little intelligent headwork, and the right kind of laboring

This month read—

Would you rather be over-paid than under-paid?

WHAT is the pay of other men doing the same kind of work you do? If it's more than yours—are you being *under-paid*, or is the other fellow being *over-paid*? Which one of you is the better off? What is your neighbor's income? That's a thing we *all* speculate on. Here's the truth from headquarters. T. Coleman DuPont tells you a lot of things about salaries other people get—from the executives down to the smallest clerks. Interesting facts taken not from imaginary pay rolls but real pay rolls of well-known companies. *Your* salary is only big or little when compared with the other fellow's—that's what makes DuPont's article hit home to you.

Going up!

YOU know Ray Stannard Baker—at least, you've read a lot of his stories and articles. Well, he took a round-trip aeroplane ride between Brussels and Paris—and his own description of this ride was the funniest and most interesting thing the Editor ever listened to. So he made Baker write it down just as he told it—and here it is. The aviator was a daredevil of 19—Mr. Baker is 49, and not much of a daredevil—and that's where the fun comes in. But read it.

You can't work for anybody but yourself—

NO matter if you have a boss or not you are always working for yourself!—and *no one else*. You can't get away from it. So says Samuel M. Vaucrain, President of the Baldwin Locomotive Works—and he proves it in this wonderful life story of his. On his way "up" Vaucrain faced many obstacles and had many decisions to make—the same kind that come up in your business and home. Read how his way of handling them has made him a world figure. Read why he never takes a vacation. Read why he says, "Never use a letter of introduction when you apply for a job."

Others offered him fabulous salaries—still he stuck!

HERE'S the personal story of Replogle—the man Schwab calls "the best steel salesman in America"—and that means the world! They call him the New Wizard in the Steel Industry. He is a multi-millionaire—and owes it to his ability to "get the signature on the dotted line." Read how he put over an \$80,000,000 order—just as easy as that!—how he is developing one of the finest iron deposits in the world, only "45 minutes from Broadway"—how a bag of gold was used to buy one of the world's most valuable ore deposits in South America—and how he has been tempted with fabulous salaries—but stuck to his own game.

Have you the courage to ask yourself these questions, and answer them?

DR. FRANK CRANE has prepared a list of questions that will show you up to yourself—good or bad—if you answer them. More people read Dr. Crane every day than any other living writer. Apparently there are several million people who don't mind the truth—and they always feel bigger and better for it. This article is written in Crane's best vein. It is packed full of fun and human nature—and facts.

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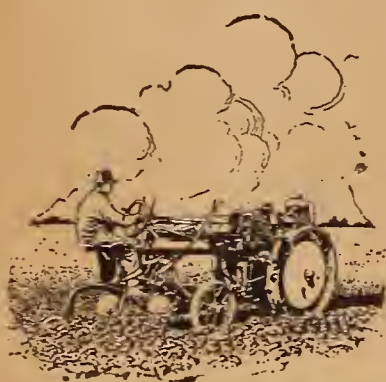
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5. Operator sees his work. "Foresight is better than hindsight."
6. Tractive power in front of work, operator behind it.

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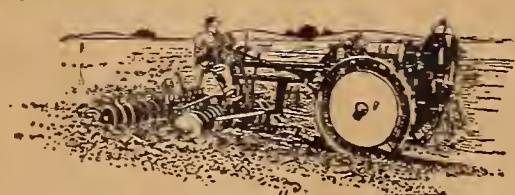
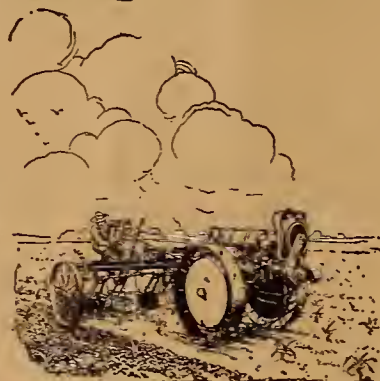
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What is the Future of Food?

(CONTINUED FROM PAGE 5)

The great wheat-saving campaign, which was the salvation of the Allied cause, must forever be to the credit of the intelligence and patriotism of the American people, and especially of the American housewives. It was the supreme test of a democracy educated to its obligations.

The law made mandatory a guaranteed minimum price on wheat. Mr. Hoover neither needed nor desired this, since all purchasing for the Allied nations was to be vested in him, which was sufficient power to control the market. It was to his interest to see that prices to producers were large enough to increase production.

Not the least foolish provision of the Food Control Law was that which limited its operation to the duration of the war. Food control was to cease automatically with the coming of peace, as though that would add a single pound to the world's food supply. Instead, with the signing of the armistice the food obligations of America, if she was to continue as the savior of the world, were immensely increased, because we were able to reach the famine-stricken people who had been inaccessible.

The American people were then left to the mercy of speculators and profiteers at a time when the world was short of food, and there was greater need than ever for conservation and the regulation of greed.

There can be no radical reduction in basic food prices until world surpluses are again produced. I do not mean surpluses that will make farming unprofitable, but normal surpluses. This will probably take two or three years. Europe's production for 1919 will probably be less than 70 per cent of normal, excluding Russia, where conditions under Bolshevism will reduce the total materially. Russia was formerly a large exporter of food. Under Bolshevik domination she has become an importer.

The temporary remedy, to be applied until the world gets back to normal, is to re-establish food control, this time clothed with sufficient legal authority.

Properly backed by law, food control should eliminate all speculation, waste, hoarding, undue handling, and excessive profits in food. It should also regulate the flow of food at our export ports, for the protection of our own population. If the people know that they are buying food at fair prices, there will be more content, even though the prices remain fairly high.

We cannot close our ears to the anguished cries of the hungry of Europe. We must share with them. Hunger is the parent of Bolshevism. The permanent solution is to produce more food, and to see that the food when produced is not wasted.

Cold storage plays an important part. It should not be forgotten that 75 per cent of our yearly production of food is marketed in three months of the year, and the remaining 25 per cent in the other nine months. But storage must be so regulated that it can be used as a weapon against the consumers.

One blessing the Civil War gave us was the development of canning. It seems probable that one of the blessings that will come to us from the World War will be a better understanding and development of dehydration, which now seems destined to play an important part in eliminating food waste in the future, and in cutting food costs. It has been officially estimated that now only about 50 per cent of the vegetables grown in the country actually reach the table.

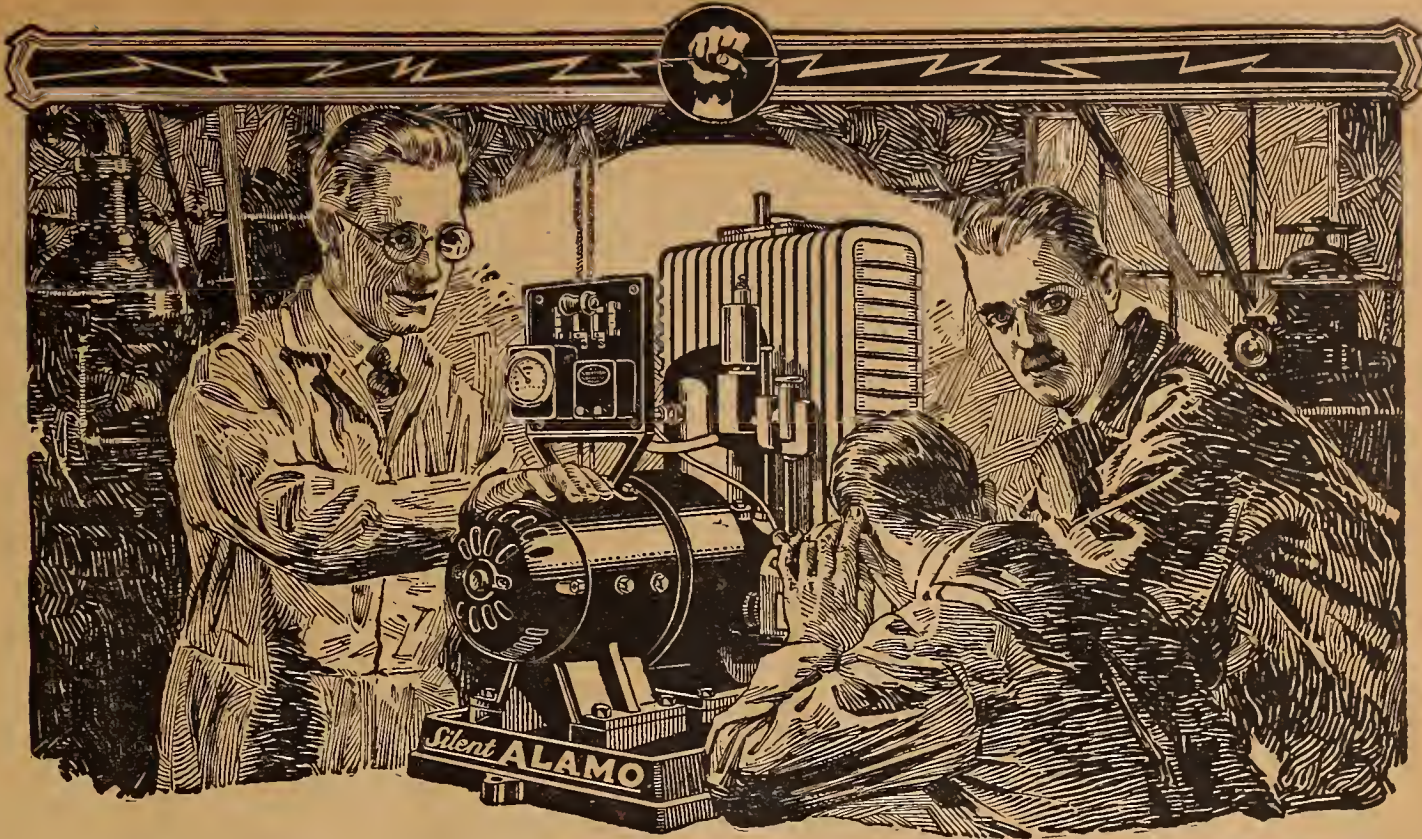
It is probable that by 1960 our population will have again nearly doubled, while that of Europe will be increased by half. No more land will be created. We must utilize our waste acres, and obtain greater production from those already under cultivation. Agricultural labor for the future will be scarce. It is probable that the farm of the future will be more largely a one-family farm—that is, the supervision of land under cultivation by one man will be limited to that which he and his family alone can handle.

There is no need for pessimism and ill nature. Man's ingenuity will meet our problems. Agriculture will be made more attractive. When it becomes practical in this country—and that day seems far distant now—intensive farming can be applied. We will learn by study and co-operation to eliminate waste and the evils of our present expensive system of marketing. But the food question will remain with us, calling for constant attention, and its solution will require sanity and temperate thought.

Reducing the Cost of Home Electricity

By C. M. Baker (Ohio)

WE FIND our electric lighting plant to be one of the greatest conveniences of the farm, and also to be a cheap source of farm power. With our house of eight rooms, including a big basement and attic, the cost of operation for summer months is about 25 cents a week, this paying for the kerosene necessary to charge the battery. In the winter time the cost runs about twice as high as this, as the hours of darkness are longer and the light is used longer. We use kerosene entirely to operate the plant, keeping the batteries well charged at all times in accordance with the instructions for operating the plant. Sometimes a mistake is made in overloading the plant—that is, there will be too many high candle-power lights in one room to make for economical operation. For instance, when we first had our plant installed we used 40-watt bulbs in our



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Charles and Calvert Lane of Cedar Hill, Maryland, gather their seed corn in the field

sockets. This made it necessary to charge the batteries every day or so, but since we have substituted 10 and 15 watt lamps for the 40-watt bulbs the cost of operation is much lessened.

For the living-room we have a cluster of four 20-watt lights, this being substituted for two 40-watt bulbs, but with the four lights we have greater distribution and the same amount of light. For the basement, bedrooms, bath-room, hallways, etc., we substituted 10 and 20 watt bulbs, which produce plenty of light at a much less cost per hour than the larger bulbs. For the kitchen we retained two 40-watt bulbs, located on two different cords, so that there would always be plenty of light in this room.

When we use a moor or electric iron we generally keep the plant charging, as this is much better for the batteries and does not lower their voltage so soon.

The Right Hen Ration

By V. G. Aubry



IF YOU will feed the following ration to your hens they should not get fat; if they do, I would advise you to get some other kind of hen: Scratch feed, equal parts by weight of corn, wheat and oats, 10 pounds to 100 birds per day. Three pounds in the morning and seven pounds at night; mash feed, equal parts by weight wheat bran, wheat middlings, cornmeal, ground oats, and meat scrap, fed in self-feeders and left before the birds at all times. Being dry, I would feed all they will eat.

It will be necessary that you give some kind of oyster or clam shell to your birds. If not, I would give granulated bone. The best kind of grit is a hard limestone grit or heavy, coarse sand and gravel.

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How I Keep My Bird Friends Over Winter

By Walter Sherman (Ohio)

THESE hills of southeastern Ohio are a favorite winter range for a great variety of birds. They find shelter in the thickets and ravines, where an abundant food supply is nearly always available. Thousands of acres here grow up each year to weeds and brush, being too steep to cultivate. Very seldom do the birds lack shelter or food here, and then only during the heaviest snows. A few inches of snow, however, can do this in the prairie sections, where the land is largely under cultivation, and there are no large areas of waste land, ravines, side hills, etc.

Nearly all species of birds migrate south for the winter. This does not mean, however, that the only birds to be found during the winter are in the warm Southland. Some birds nest during the summer in regions far to the north, and they migrate south to spend their winters with us, while most of our summer birds leave us to go south. Thus the number of species that can be found during the winter



With a little thought and care you can keep your yard full of birds the year round

months is really quite surprising to the average person.

I find birds as well as chickens like a balanced ration. A chunk of suet or fatty meat of any kind is a great treat to nearly all of our birds; the seed-eating species as well as the worm and bug eaters. If this fatty meat is placed in the fork of a tree or in some sheltered place, the birds will soon find it, and come daily to it. I use fatty meat or suet because I never yet have found the birds able to tear off and eat any of the lean parts, but they will clean up every particle of the fat.

I prefer to place such feed under shelter such as is offered by a covered driveway, or by fastening it to the rafters in the barn. Birds like to feed in a sheltered place on bad days, and find food in these places.

The creepers and nuthatches especially are fond of fatty meat, and will soon become daily visitors. Be sure to place it where cats and dogs cannot help themselves to the feast.

These creepers and nuthatches, as well as woodpeckers, flickers, and sapsuckers, bear some ill repute because of their habit of boring holes in trees. You have seen them start on the trunk of a tree and begin thumping the bark, while they travel up and up, always thumping. This thumping can be heard for a long distance on a crisp winter day. A very pleasant sound indeed to a lover of trees. Watch these birds closely and you will notice that they stop occasionally to bore a hole, pry under a piece of loose bark, or investigate a crack or crevice. They are hunting for bugs, worms, grubs, eggs, etc., and the sound tells them when they have located one beneath the bark. Once located, they will dig out the grub or worm, leaving a small hole in the tree. You should thank them instead of blaming them for this process, for the insect or grub thus destroyed would have caused a great deal more damage than the hole made in removing it.

Only one of these species, as far as I have observed, bores any holes except when after food, and that is the yellow-bellied sapsucker. These, however, are shallow holes, and soon heal up, with no permanent injury to the tree.



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It is the patriotic duty of every woman to save in every way possible. One way to save is to dress patterns. We sell dress patterns of late, up-to-date styles at 8 cents each or two for 15 cents. They are the same patterns you are paying 15 to 25 cents for at stores, made by reliable firms, correct in every detail.

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Send me 50 cents for one year's subscription to HOME INSTRUCTOR fashion magazine and I will send you without charge my Big Fashion Book showing over 700 illustrations of latest styles and agree to sell you any patterns you may want at 8 cents each or 2 for 15 cts. You will save many times the cost of my offer in the year. Tell your friends and WRITE TODAY.

A. OTIS ARNOLD, Dept. 22, QUINCY, ILLINOIS

A sheaf of wheat, oats, or millet fastened to the rafters of the barn out of reach of rats and mice quickly becomes a favorite bird resort. In 1916 I raised a small plot of oats from a sample package of very high-priced seed, and, being too busy to thresh them, I wrapped them in a canvas and suspended them from the barn rafters out of reach of rats and mice. I left them there till toward spring, when I discovered to my dismay that the birds had done the threshing, and I had no oats to plant.

Corn on the cob is a winter dish greatly relished by one of our most beautiful birds. The past winter we had four cardinals with us almost all the time. One of them, and often all four, could be seen almost any time in our back yard. Two small spikes, with the heads filed off, were driven into a small limb. An ear of corn placed on each spike was soon found by the cardinals, who paid daily visits to it.

With the coming of summer I stopped feeding corn, but the cardinals stayed with me. I could not find their nests, but I know they were somewhere near. No other birds got any of the corn as far as I know. The English sparrows would sometimes steal a grain after the cardinals had loosened it from the cob, but they were unable to loosen it themselves.

Of course, I kept my rifle busy after the sparrows, as I have been doing for the past fourteen years, and this I consider one of the big secrets of my success in making friends of birds. Keep the English sparrows away and the song birds will stay with you. I never hesitate to shoot a sparrow, even though it be sitting on a bird box beside a bluebird or a martin. The latter soon learn what the crack of a rifle is, and are very little disturbed by it. I never use shot cartridges, however, as there is too much danger of injuring the wrong bird.

The neighboring farms are nesting places for hundreds of sparrows, and they try hard to nest here; but we keep after them constantly, and are well paid for doing so by the abundance and variety of desirable birds that stay with us all the time.

Too often we see a fine bird box given over during the winter to the undisputed possession of the English sparrows, who fill it full of weeds, grass, and trash, leaving only a small hole in the center. In the spring when the martins or bluebirds come back they find their old home such an impossible mess that in disgust they go and seek new quarters. No self-respecting martin or bluebird would live in a covered nest such as the sparrow builds. Their nests are always open at the top.

If your bird boxes are full of sparrow nests, remove them as soon as the first martins or bluebirds make their appearance, so they will have an even chance with the sparrows for possession. Burn the old nests, as they usually crawl with lice.

With a little thought and care you too can keep your yard full of song birds the year round. And without them you are missing one of the country's greatest joys.

Tractors Bring New Plowing Problems

IF YOU want to do your tractor plowing in the easiest and most economical way, it will pay you to give a little thought to arrangement of fields and laying off of lands, say the plowing experts in the Department of Agriculture. While many farmers do not like an idle plow going across the ends, it has been found that this method eliminates short, awkward turns, and leaves less space to be plowed afterward by horses. The lands should be measured off accurately in the center of the field, leaving an equal area on all sides for turning. This need not be over 15 or 20 feet with short-turning outfits, but it is better to allow at least 50 feet in the headlands.

A little extra time spent in measuring off necessary distances and setting stakes for guidance will usually be more than returned in the reduced work of finishing. If the headlands are of equal width, and that width is an exact multiple of the plow width, an extra trip may be saved where only one or two plows are working.

The advantages of the other method, where the plow is left in the ground all the time, are that little or no time is lost plowing, and ordinarily the number of dead furrows and back furrows are eliminated. Starting in the middle of the field the plows are lifted at the end for the first three or four rounds, and after that the turns are made plowing. When the entire area has been plowed, if the field has been correctly measured, the last round will plow the land next to the fence on all sides.



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IN your home vicinity the man who handles the **Full Line of International Farm Machines** stands for a great, honest, sincere force in American farming life. He is a hard-working, unassuming man like yourself.

His place of business may not at first glance express his great value. But he is soundly backed by a long, careful history of good machine manufacture stretching nearly 90 years into the past, to the Virginia field where Cyrus McCormick put together his first reaper. For your community, he is the representative of International Harvester Quality and Reputation and Service.

Now—as you enter 1920—your International dealer has a complete line of International-made farming equipment ready for your convenience. Let him take care of your farm equipment needs.

STANDARDIZE! Standardize! That is the key-word in modern progress. The old days of scattered dealings are fast closing.

The farmer standardizes his cattle, hogs, and poultry, just as the manufacturer standardizes his products and unifies his buying of material. No longer does he dabble in mixed breeds, mingling a hybrid assortment. Burdens are simplified—expenses are reduced.

The progressive farmer today is rapidly standardizing his farm machines. When he chooses his equipment from the International Full Line he knows he may take quality for granted. He knows that he may rely on the International dealer and the International Harvester Company; that Harvester repairs and service are always at his hand.

He knows how much pleasanter it is to deal with one good dealer who values him as customer than to scatter his wants helter-skelter. He knows the surprising re-sale value in International machines. The International Full Line makes it an easy matter to stock any farm with thoroughbred machines.

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A warm fleecy lining— an all-rubber surface—the new “U.S.” Walrus

ALL the warmth and convenience of a cloth-top arctic—as water-tight and easily cleaned as a rubber boot—that’s the new U. S. Walrus!

It’s an *all-rubber overshoe*—the sort that every farmer has always wanted.

Snow-tight and water-tight in every part, the U. S. Walrus gives complete protection for the roughest sort of wear. Its soft, fleecy lining will keep your feet warm in the coldest weather.

You can wade through mud and slush all day, and then at your doorstep—swish!—a pail of water or a rinse at the pump leaves the U. S. Walrus clean and shining. Every trace of mud is quickly washed off that smooth rubber surface.

Then snap open the buckles—push the U. S. Walrus off with your toe—and there you are in your leather shoes, as clean and dry as when you started out.

The comfort and convenience of this new overshoe are backed up by *real strength*. Designed by a staff of experts—produced by the oldest and largest rubber manufacturer in the world—the U. S. Walrus is *built to last*. Its sole consists of heavy layers of the finest rubber. At every

single point where the wear is hardest, the U. S. Walrus is heavily reinforced.

Ask your dealer to-day to show you the new U. S. Walrus. Notice the lining of thick, soft fleece—the smooth, all-rubber surface. After



“U. S.” Rubbers — A wide range of models, in light and heavy styles to meet every need. Made in all sizes, for men, women, and children.

you've worn a pair for a day or two, you'll realize why they're fast becoming so popular with farmers everywhere.

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Whether you prefer a boot or a bootee for the wet season, a "rubber" for general use, or a cloth-top arctic—you can find in U. S. rubber footwear exactly what you need.

Every one of these models is made with the same care in details of construction as the U. S. Walrus. Tough, heavy soles—special reinforcements at all points of strain—and *always* the highest quality rubber—these points are winning U. S. rubber footwear thousands of new friends every year.

Ask for U. S. Rubber footwear—it means solid wear and long service for your money.



"U. S." Arctics—Made of snow-tight cashmerette, warm and comfortable. Reinforced where the wear is hardest. In one, two, four and six buckles, all weights and sizes.



"U. S." Boots—Reinforced where the wear is hardest

- 1—The sole—Five soles in one, all of the finest rubber.
- 2—Back of the heel—Every step you take puts a strain on the seam in back. At this point every U. S. Boot is reinforced with **ten thicknesses**.
- 3—The toe—Won't break through like the toe in so many boots. It has three heavy layers, a special toe-cap, and an extra sheet of highest quality rubber on the outside.
- 4—The "bend" in front—A boot has no lacing in front to "give" as you walk. Every mile you cover, the rubber there bends and buckles 750 times. Six heavy thicknesses give long wear to U. S. boots at this point.

U. S. boots are made in all sizes and styles—Short, Storm King, Sporting, and Hip. In red, black, and white.



Ask for "U.S." RUBBER FOOTWEAR

United States Rubber Company

They Made the Folks Sit



HERE we have Marius Malmgren of Hickory, Virginia, sitting on the 209 bushels of corn he grew from one acre of Norfolk County land. It's a pretty hard seat for you, Marius, of course; but when we stop to consider that it's the prize showing of the whole club, that makes it pretty comfortable, doesn't it? And we have an idea, Marius, that you'll make a go of things wherever you are and whatever you're doing later in life. Good luck to you!



AND here is Emma Murphy, County Canning Club Champion of Charles County, Maryland, training a younger club member in packing vegetables for canning. Emma was one of the Southern girls who last year put up 2,574,676 containers of vegetables and fruit. Emma's ambition before joining the club was to go to Washington and be a waitress. But she got interested at home, as youngsters will when encouraged to, and decided she would rather supply the food than serve it.



AND do they grow real boys in far-away Utah? They do! If you don't believe it, look at the three prize ribbons on the cage, and the exhibitor's badge worn by Warren Garrett of Davis County, that State. And gaze on the pride-swollen chest of that White Leghorn cockerel, if you please. Of course, the three biddies take the occasion a bit more calmly than the men-folks, but you know how they will brag about it among the other hens when they get home.



HERE is another modest lad, a Marylander from Montgomery County, this time, who didn't send his name. But he has a record. He did so well with his club work that his father is going to take him into the pure-bred dairy business with him. He learned corn-growing through the state extension service, and then bought a pure-bred Guernsey calf from the state experiment station. Then Dad suggested the partnership. All it takes is results to make the folks sit up and notice you.

MAKING the world sit up and take notice is no idle pastime with Violet Willoughby of Pitt County, North Carolina. She and her mother manage the tobacco farm they have there. Hence, having to do her club work at night, Violet could only put up 775 cans of garden stuff. Violet didn't think that was much, but we know a lot of girls who would faint deadaway if they thought they had to put up 775 cans of truck under any circumstances. It would take about six of them to make one Violet Willoughby.



ONE glance is enough to convince you that Tobias, the calf, is just as proud of the boys as the boys are of Tobias. And well they may be, for they are all thoroughbreds. The boys are Walter and Warren Grothol, of the Delphasen, Minnesota, Jersey Calf Club. All the boys in this club bought pure-breds for \$75 or more apiece, and they are organized on a three-year project basis. We predict that this trio will finish somewhere near the top. And we hope Walter and Warren and Tobias will let us know about it.

Up and Take Notice

BUSINESS is business the world over, even in Yakima, Washington, where Margaret Kirk proved that she had a head on her shoulders. Margaret not only did her own canning, but she also went into partnership with some other girls and canned for them, at a profit. She had the jars, cans, and truck brought to her home, and put them up at the rate of 7c for pints, 10c for quarts, and 15c for half-gallon jars. Of such ideas is success compounded.



HERE we have a case of modesty we don't entirely approve of. This young Texan has larruped his dad so shamelessly at hog-growing that he failed to tell us his name. But here he is with his record, just the same. These two pigs, litter mates, speak for themselves. At five months of age the boy's porker tipped the scales at 240 pounds, while Dad's pig could only muster 85. And you know what that means in dollars and cents with pork at the price it has been. Good work, Texas!



THE test of a successful man in any line of business is not "Can you do it?" but "Can you do it again and again, and keep on doing it?" Now, Fred Henrikson of Stevens County, Minnesota, realizes that. And it explains why he has been County Corn Club Champion for three years. "He is," said the man who sent us his picture, "a fine sample of the type of boy from whom the best farmers of the future will come." You win our vote, Fred. Now let's see if we can't make it four.



TO Esther Newby of Portage County went the honor of exhibiting the champion Holstein heifer of the entire bunch shown by Wisconsin boys and girls at the Wisconsin State Fair at Milwaukee in 1918. There are a lot of folks who thought that when beer quit business Milwaukee and Wisconsin would have nothing left to boast about. But we guess Wisconsin needn't worry so long as it has its Esther Newbys. No, sir!

FIRST she weighed him every month. Then she weighed him every week. Then the flies bothered him, and she made a fly net for him. Then it got so hot she gave him a bath every day. That's how Mildred Oelke of Rice County raised Darkie, winner of second place in the State Baby Beef Contest at St. Paul, Minnesota. For which, also, she received \$400 cash and prizes. Meantime she helped Father feed 150 Poland-China pigs, and Mother to raise a garden. A real record, that is, Mildred!



THESE two successful young poultrymen of the State of Nevada are Mark and Blaine Menke. As members of the boys' club they purchased two ducks and a drake. At the end of the club season they had sold 19 ducks at \$1.25 each, and four more at \$1 each, making a total of \$27.75. The expenses were \$9.25, profit \$18.50, and they still had three ducks as a starter for the next year. So, you see, they really do other things in Nevada besides granting divorces at Reno.



Cupid Astride a Mule

Part two of the story of Davy Allen's adventures, in which he plays hero by rescuing his adored lady

By Samuel A. Derieux

Illustration by W. B. King

This tells you what has gone before

DAVY ALLEN, fourteen, an orphan and ragged, had a bill to collect for his Uncle Ben at the Ridgeland Hunt Club of South Carolina. He set out on Pete, his obdurate and lazy mule, in the wee sma' hours, and arrived at the club drenched by a morning shower. Agnes Waring, an heiress from the North, saw him and insisted he dry himself before the fireplace.

At the Hunt Club were also Philip Girard, a poor but ambitious writer, and Bernard Fleming, a brilliant young doctor, both in love with Agnes. While talking, Girard suggested that they ride back with Davy and hunt birds, as Davy declared there were "millions of 'em" near where he lived. Dr. Fleming could not go, as he was awaiting a telegram, but the others set out, and he promised to join them later.

They reached Gant's Store, at the cross-roads, about noon, and stopped for crackers and cheese. While there, Davy heard Susan, the village belle, tell Jake Raines, the ruffian of the community, that if he were to give her a necklace like the one Agnes had on she might give him the answer he wanted.

When the hunt begins, Agnes discovers that, although she can hit clay birds with reasonable precision, she cannot bring herself to shoot a real one, so gives her gun to Davy, thereby winning his undying love. Girard and Davy leave Agnes at a deserted hunting lodge while they go after more birds. They become fascinated with the hunt and wander further than they planned, and when they return to the hunting lodge Agnes is gone. Girard suggests that Dr. Fleming must have come on, and that she rode back with him. But on the way back to Gant's Store they meet Dr. Fleming, who has come straight from the Hunt Club without seeing her.

They are now really worried, but decide to make sure she has not reached the club by some other route, so go on to Gant's Store to telephone. While they are getting the club on the wire and ascertaining that Agnes has not returned, Davy learns that Jake Raines has been down in the swamp drinking. Davy realizes that Agnes may have turned off into the swamp road, and starts out "on his own" to find out what he can.

THERE had never been a faster sprinter in Gant's township than Davy Allen. And Davy never made such speed as he made that night from the store to the path that turns off to the lodge.

All out of breath, he reached the lodge. He could hardly bring himself to look that way. He was an ignorant Southern boy; negro ghost stories were his only lore. On that porch he had seen her last, so straight, so full of color, standing in the sunlight. What if now he should see her ghost!

With wildly thumping heart he stole past the spot. Half running, half walking, he crossed the flat where he and Girard had got into birds. He could not make out the pools under the straw. He splashed into one and splashed out, dripping, wet to the hips. Tough bamboo briars tore his trousers and gashed his knees. Panting, gasping, he reached the woods where he and Girard had shot the single birds. There he had turned to wave at her as she stood on the porch.

At the first road he stopped, struck a match, and searched the ground. No one had passed that way since the rain. He plunged through the bushes to the second road. Again he struck a match and bent low, his gun at trail. He straightened up with a gasp, then stooped again. Here were fresh horses' tracks leading into the swamp. There was no return track.

What was this? A man's track, made that day, also leading to the swamp! He struck another match to make sure. He looked fearfully around. What peering eyes had seen him by the flicker of these matches? He tried to collect his wits. A horse had gone that way, a man on foot had gone that way—and the road wasn't used half a dozen times a year!

It was fearfully silent and lonesome. The trees were draped with Spanish moss, and in the hazy light looked lofty and solemn. Not a frog croaked. Not a breath of wind disturbed the dead hanging moss. He thought of returning and telling Girard of his discovery. But Girard would be out looking for her by now, and time would be lost.

He started running again. A root tripped him, and he fell sprawling. His mouth struck cruelly hard on a pine knot. The blow seemed to stave in his teeth, to jar the bones of his skull. He lay dazed and bleeding. Then he got up on hands and knees and felt for his gun. Slowly he clambered upright. Blood, warm and sticky, was flowing into his mouth. Already his lips were heavy with swelling.

"Lord, Lord!" he sobbed. He staggered on. The road was full now of watery ruts. The trees were growing thicker, their beards longer. Vines like twisted cordage of a wrecked and aban-

"Hands up thar, Jake Raines! Dam you! Or I'll blow yo' brains out!"

The man wheeled about, his hands over his head. Davy was sobbing now. His finger was on the trigger. The muzzle was pointed at the man's head. No man ever had a closer call than Jake Raines.

"Oh, Davy!" Agnes laughed hysterically. "This man—" "You pass on!" ordered Davy. "Mr. Girard's a-waitin' for you at the sto'. Go on, Miss Agnes!" he pleaded. "Go on!"

"Leave you here, Davy? No—I won't go! I won't leave you here with him."



"Back agin that tree! Back, Jake Raines, back! I don't wanter kill you, Jake Raines!"

doned ship stretched from tree to tree. Lugubriously an owl hooted. He had reached the point where the road enters the swamp.

A voice came out of the woods ahead! He stopped, cold of a sudden, paralyzed. It was the voice of a woman, high pitched and tense.

"Get out of the road!"

"I ain't goin' to do no such thing!" came a man's thick drawl. "You just han' over that chain about yo' neck an' I'll git you out of this. Come on now—don't let's have no foolishness!"

"You're the same man that told me at the fork to come this way. I know your voice. You're drunk. Get out of the road. Up, Fannie, up! I'll ride you down. Don't touch the bridle! Don't—"

Davy clicked the safety catch of the gun forward. Trembling, faint, frightened, but with jaws set and eyes dry, he ran forward. In the hazy moonlight he saw the back of a man. A woman on horseback faced him. With frightened snorts the horse reared and plunged. But the man stood his ground in the road.

"I never meant no harm," sneered Jake. "Take that gun down, fool!"

"Dam if I do! Back agin that tree! Back, Jake Raines, back! I don't wanter kill you, Jake Raines!"

Jake backed against a big pine. Davy felt his lips swelling more outrageously. The blood dripped down his chin and stiffened. The gun trembled. But his finger was still on the trigger; and down the barrel, the sight touched by the dim moonlight, he looked straight into the sullen face of Jake Raines.

The dim woods, the hulking man, the woman on horseback began to swim round and round. He could hardly keep the muzzle pointed at the whirling face. His knees were growing faint, his breath short. He felt that he was falling backward, then lunging forward. Like a drunken man who keeps his eyes fastened on a light, Davy, grim, half-conscious, held the sight of the gun on the face of Jake Raines.

"I hear voices! Somebody's coming!" Girard's big pointer rushed past the boy, barking and snarling. There was a splash of horses' feet, a cry from a man, a lighted

lantern—then more horses, more voices. Somebody caught Davy by the arm. With a sob the boy sank in his tracks. The man laid him gently down. Agnes sprang from her horse and knelt on the ground.

"Davy! Davy!" she cried. "Quick, Dr. Fleming!"

Dr. Fleming knelt on the other side of the boy.

"Hold the lantern here!" he ordered. "How did he get this wound?"

"I don't know," panted Agnes. "He was bleeding when he came up. Oh, Dr. Fleming, is he—"

"One minute," said Fleming.

Just then Girard stumbled into the circle of light.

"Agnes!" he cried.

She did not glance up. Girard looked down at the figure on the ground—Davy Allen, his face white and bloody, lips swollen and purple.

"He fell as we came up," explained Sam.

"What about my boy, Doc?" called Uncle Ben, who had taken charge of the prisoner.

"Only loss of blood," reassured the doctor.

"Glad to hear it," said Uncle Ben. "Girard, call off this here dog of your'n; he's about to eat Jake Raines up!"

"Unfasten the boy's collar, Agnes," directed Fleming. "There, lift his head a little. That's it."

"Anything I can do, Fleming?" asked Girard.

"No—just stand out of the light." The doctor glanced up at Sam. "Bring some water!"

Tenderly Agnes bathed Davy's face with her handkerchief, holding his head on her arm. The doctor, his hat on the ground beside him, felt the bones of the boy's skull. The heads of the doctor and the woman almost touched.

Slowly Davy opened his eyes and looked up into the face of the girl.

"Davy," she said tenderly, "my little knight, my brave little knight."

"Whar's the gun?" asked Davy.

Agnes glanced up at Sam, who stood grinning.

"Find it," she whispered; then to Davy. "The gun's right here, Davy, and so are all your friends."

Davy raised himself on his elbow and gazed about him.

"What do you want, Davy?"

"All of you"—he stopped and spit blood out of his mouth—"except Miss Agnes an' Mr. Girard step back a minute. I got something to say."

Sam stepped back at once; Fleming slowly rose to his feet, put on his hat, and turned away. Girard leaned over the boy. Agnes glanced for a moment coldly into his face.

"Tell Uncle Ben," whispered Davy, "that you loaned me the gun. I'm all right now. Lemme git up. This here ground's cold."

Girard helped him to his feet. The boy spit out a mouthful of blood.

"Thar went a tooth," he announced. "I reckon I'll be all right now."

"Oh, Davy!" Agnes was half laughing, half sobbing.

They lifted the boy on the mule behind Uncle Ben. Sam Long took charge of Jake. Fleming and Agnes rode side by side. Girard found his horse and brought up the rear.

When they reached the store Susan was still keeping watch. Dr. Fleming made Davy sit down in a chair facing the light, and carefully probed the bones of his face. Agnes and Susan tore cheesecloth into strips, and the doctor deftly bound the wound. Girard watched them anxiously. "Nothing permanently the matter," Fleming straightened up, and adjusted his glasses. "Just a tooth gone."

"What a shame!" cried Agnes. "We'll have that fixed."

"Got plenty left," grinned Davy through the bandages.

Girard turned away from the group. His anxiety was removed. He went to the back of the store and huddled close to the stove. Uncle [CONTINUED ON PAGE 60]

The Hoover lifts the rug from the floor, like this—flutters it upon a cushion of air, gently “beats” out its embedded grit, and so prolongs its life



Even the clinging hairs that pets spread on rugs are instantly detached by the thorough sweeping of The Hoover. By its gentle beating it dislodges the destructive embedded grit. By its suction cleaning it withdraws the loosened dirt. These are the three essentials of thorough cleaning. Only The Hoover performs them all. And it is the largest selling electric cleaner in the world.

The HOOVER

It Beats—as it Sweeps—as it Cleans

THE HOOVER SUCTION SWEEPER COMPANY
The oldest makers of electric cleaners
North Canton, Ohio Hamilton, Canada

The Tale of a Tail

A strange story of how the rabbit happens to have no tail, why he runs in a circle when pursued, and why he keeps his nose bobbing all the time

By Frank A. Secord

(Copyright 1920, by Frank A. Secord)

Illustrations by Edwina Dumm

MR. POSSUM hung by his tail to a branch of a tree. He was swinging back and forth, and now and then he snored a little, which proved that he was asleep. Below the tree sat a bunny, his eyes blinking wearily. He had been out to play all night, chasing his own shadow in the moonlight, and he needed rest. A big green fly kept bothering the bunny, who at length wiggled his ears, up, down, sidewise, and back, to scare the fly away. Having poor success, the bunny at length cried:

"Oh, get away from me, Fly!"

At once the possum ceased swinging, and he looked down to see who spoke.

"What's the matter, Rabbit?" inquired Mr. Possum.

"Flies!" was the grunted answer.

"Why don't you use your tail to shoo them away?" Mr. Possum asked, laughing slyly as he spoke.

"I don't know whether or not you mean that for an insult," the bunny said, a little dryly; "but I might tell you that I have no tail—if you don't know that."

"I have one, but I use it to swing by. In swinging I don't give the flies any chance to light on me," Mr. Possum told Mr. Bunny, dropping to the ground beside the long-eared fellow.

It was a pretty warm day, and neither the possum nor the bunny cared to stir about much, so they agreed to visit and tell stories.

"Tell me," the possum asked, "how comes it that rabbits have no tails? I am sure you can tell me a tale about your tail."

"Well," was the answer, "I might tell you, friend; but I do not care to have you go about repeating it, for it reflects no credit upon rabbits. I wasn't to blame, my father wasn't to blame, neither was his father nor his grandfather. What I am about to tell you happened so long ago that the oldest owl in these parts cannot give us any idea of the time."

"Once, many years ago, all rabbits had long tails, which were bushy and were their pride. Other animals used to say, on seeing a bunny passing, 'Oh, I wish I had a tail like a rabbit!'"

Mr. Possum quickly drew his tail under his body, for it was nothing to be proud of, being bare and like the tail of a rat. He was fearful that the bunny might make some remark about it.

Continued Mr. Bunny:

"The rabbit who was to blame for our having no tails was sitting, one day, on a log on the edge of a stream. The sun was warm and inviting, after a visit from Jack Frost on the night before. Well, the rabbit fell asleep, and had a dream about a wolf after him. He made a spring to escape the wolf of his dream, and fell into the water. He could not swim, so he had to float the best he could, until he finally dragged himself up on a snag out in the stream, far from shore. He was too far away to jump back, and while wondering how he would ever reach land again he was beset by several million mosquitoes."

"I wish to remark that the mosquitoes were much worse than the fly that was after me. They stung the bunny in hundreds of places. It is said that he would have died of his hurts, had it not been for his tail, which he used constantly to drive the pests off his body."

When his tail became dry and fluffy, as it should have been, he found it an easy matter to keep himself comfortable, and, switching his tail, he managed to exist.

"Presently there crawled up on the snag,

at the rabbit's side, a badger who was crying. He had lost his tail in a trap, and was afraid to go back into the water, he said.

"Stay with me, then!" said Bunny.

"The badger agreed but in a short time the mosquitoes stung him so badly that he cried out in his misery.

"Bunny," said he, 'help me with your tail, please. I have none, alas!'

"Why, Badger, I cannot aid you," was the answer. 'I have all I can do to save myself. You are welcome to stay on the log, but you must help yourself and not ask me to fan you.'

"The poor badger, at last, unable to stand the stings of the insects, cried out that he would go into the water, even if he might be caught in another trap. 'If I am killed, farewell!' the badger said, and off the log he dropped.

"The idea!" the bunny grunted. 'Folks who have no



It was a pretty warm day, and neither the bunny nor the possum cared to stir about much, so they agreed to visit and tell stories



Frank A. Secord ("Uncle Ross"), the Man Who Wrote This Story

HERE, boys and girls, is Frank A. Secord, better known as "Uncle Ross." This is his first story in FARM AND FIRESIDE, but it will not be his last. He is going to write a lot of them for you if you like them as well as the other youngsters he writes for like his stories, verse, and riddles.

"Uncle Ross" lives at Omaha, Nebraska, and he has written the "Uncle Ross" page in the Omaha "World-Herald" for many, many years. Says he:

"I like best to write what children like to read—tales of animals and birds wherein the little feathered and furred friends of the woodland and field do many queer and interesting things in a way that children like best."

Grown-ups like his stories, too, though they are not written for grown-ups. "Uncle Ross," for instance, got a letter from a venerable old bishop not long ago, telling him that he, the bishop, couldn't eat his breakfast on Sunday morning until he had read "Uncle Ross's" animal story.

We hope you will like Uncle Ross, and we think you will. We know he will

THE EDITOR.

tails should not look to others for help. They should take care of their tails, and they would have them in case of need."

"There was a ripple in the water and the bunny, on looking up, saw a very beautiful little lady seated on the log at his side. She was dripping wet, but he could see that her clothing was of the finest silk ever spun by an expert spider.

"My dear lady!" exclaimed the bunny, 'How comes it that you are here?'

"I admired your beautiful tail, Mr. Bunny," was the answer, 'and while watching you gracefully swing it I fell into the stream, from yonder shore. The current drew me hither, and I managed to get on this log.'

"The mosquitoes soon discovered the dainty little lady, who explained to the bunny that she was the lady of the milky way; that she had come to the earth on a moonbeam, which was piloted by a lark; that the sun came while she was wandering

say! Why don't you fan the mosquitoes off your own body and not waste your efforts on a badger?'

"To the bunny's surprise he found that his beautiful lady of the milky way was gone, and in her stead the badger without any tail sat at his side.

"You!" exclaimed the astonished rabbit.

"It is good of you to at length help me," squeaked the badger.

"Scat!" the other cried, frisking his tail cruelly in the badger's face, knocking him off the log.

"The bunny turned his attention to the coon, who was still casting stones at him. He turned his fine tail upon himself, and while scolding the coon a voice at his side whimpered:

"Mr. Bunny, you so gallant and now refuse to help me keep away the pests?"

"There, before the bunny's very eyes, sat the pretty lady of the milky way, again.

"Why," said he, 'I thought you were the

badger! Pardon my seeming rudeness.' "They talked a while, and then the little lady promised to take Mr. Bunny to land, when evening came with the moon. 'You shall be safely landed on shore,' she said, 'and I hope to see you often hereafter.'

"You shall, if I have anything to say about it!" the bunny declared.

"All day long the rabbit kept the mosquitoes off the little lady of the milky way, and when evening arrived she beckoned to a moonbeam, which came at once, and on this she walked to shore, leading Mr. Bunny by a paw, he standing very erect, his long, fine, bushy tail gracefully trailing behind at the side of the train of the lady's dress."

"When the two arrived at the shore, Mr. Bunny bowed to the ground to express his thanks; but when he raised his head again he found, greatly to his astonishment, that he stood at the side of the badger, who had lost his tail in a trap."

"You," roared the badger, 'willingly fan mosquitoes off a beautiful little lady, but you refuse to aid a poor badger who suffers pain and who has lost his tail in a trap. For your selfishness this day you will lose your tail, and every rabbit hereafter will be without a tail to be proud of or to use in helping keep off mosquitoes, flies, bugs, etc. Look! Yonder is your tail!'

"Mr. Bunny looked in the direction pointed out by the badger and, true enough, he saw his tail hanging in the air. He immediately ran after the tail, but the badger caused it to move just ahead of him, and to circle around a big tree. Around the tree, in quest of his tail, Mr. Bunny ran; and around the tree the badger chased the bunny, barking at his heels and scolding constantly."

"Once or twice the bunny thought he nearly had hold of the tail, but each time that he tried to grasp it the badger nipped him on a leg, and he yelped and ran on, the tail keeping just out of reach."

"Well, in this way the bunny kept on until he could run no longer, and at length he dashed into a hole that he spied on the way around the tree. Panting for breath, he stuck the tip of his nose out to plead with the badger for his tail."

"I am no badger!" the animal cried. 'I am the little lady of the milky way, but you are a selfish rabbit, with no tail. You saw fit to help me when I was fine and beautiful, but you would do nothing for me when I was a poor badger, already hurt by having his tail chopped off in a trap. You will have many a long, weary day to think this over, Rabbit!'

"Mr. Bunny managed to grunt, between his gasps for breath, that, while it was true he had no tail, he did not believe a word of that which was told him."

"Very well!" roared the badger, and the next instant he disappeared, and in his stead stood the pretty lady.

"Well, then the bunny begged to be taken back on the log, to be given his tail, and also to be given a chance to fan the mosquitoes off the badger. 'I will remember,' said he, 'that you are the badger and I will be as kind to you as if you were the beautiful lady of the milky way.'

"Too late!" was the answer.

"Oh, please!" whined the bunny.

"As you are now, so every rabbit will be from now on!" the little lady cried. 'Never again will any bunny have a tail.'

"Bunny crawled out of the hole, where he was hiding, and wept great tears, hoping that the little lady would relent and help him get his tail, which still kept [CONTINUED ON PAGE 53]



Presently there crawled up on the snag a badger who was crying



Around the tree, in quest of his tail, Mr. Bunny ran; and around the tree the badger chased the bunny



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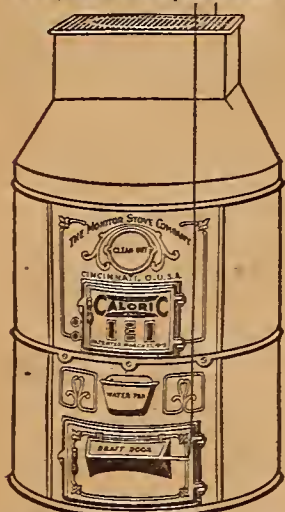
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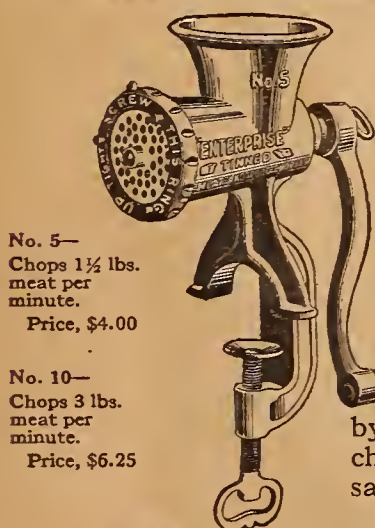
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[CONTINUED FROM PAGE 12]

had a hunch. I am beat. I guess Eb Patrick can buy me out now when he gets ready. A landslide on Painted Mountain has ripped out the far end of the lake bank and let the water down till it has cut me off. There is not any fall any more. Not a drop in the ditches since it happened last month. If Eb Patrick could not win his case, it looks like he must have a stand-in with the Almighty, because nobody else could have done this for him so complete. It is better than buying up a Jude, besides a lot cheaper. And now it is Eb's bet, and he knows I do not hold any cards but a busted flush. And so I am beat."

That letter brought young Gordon home, hot-foot, anxious, eager. Anxiety and eagerness became acute when he saw the change in his father—the odd relaxing of the old man's mental fiber. For the first time in his life old Graham seemed half reconciled to adversity, in the mood his letter had hinted, ready to pitch his hand in the discard and accept defeat.

Together they reconnoitered conditions on the mountain. There was no mistaking their gravity. The lake, a natural reservoir on the mountainside for melting snows and the surplus fall of the rainy season, had given an ample supply of water for both ranches; but now the quarter-mile channel of the overflow to Llewellyn's side stood bone-dry. Everywhere on the lake's rim was proof of the water's sudden subsidence. It had dropped two feet below the old level. At the northern extremity the cause was plain. It was as Graham's letter had said. There were all the evidences of a great landslide from the heights whose course had swept out enough of the lake's containing wall of rock and debris to let the water down below the level of its old discharge over the cliff to Llewellyn's ditches. The certainty of it all was dismaying.

By and by the two men sat together at the cliff's summit, looking down over the plain. There too lay matter for dismay. Already the lusty brown green of the alfalfa showed a sickly yellowing streaked with dull brown. Old Graham summed up his own thinking with something like pealance:

"If I could figure out it was Eb Patrick's doin' I'd stay with it till kingdom come; but it looks mighty much to me like nothin' but one of the acts of God you read about."

Gordon was doing some hard thinking on his own account as he sat shooting pebbles with his thumb over the cliff, watching their long fall.

"Nothing is an act of God if you can find a way to beat it," he announced.

The old man looked up sharply, with a note of grimly approving laughter.

"Well, I reckon that's good doctrine," he said. "But about beatin' it, now. What's your notion?"

"We might deepen this old channel by two or three feet—blast out the bed," Gordon offered. "There's a chance, if—"

"Yes—if!" Graham caught him up. "I've figured on that. It would be simple—if I don't own this land here."

It's government land yet. That's the trouble. There's no way to get title to it. I could apply for a permit to do the work, on the showin' I could make, if I could be let alone. 'If! But what would the Patrick outfit be doin'?' They'd be usin' all the influence they've got to stop me. They'd tangle me up in lawin' over it for a year—five years. I'd be beat long before then. If we had the old longhorns back, they could rustle some kind of a livin'; but these heavy grades and full-bloods have got to have feed.

There was only one other obvious suggestion—the remote possibility of compromise with the Patricks. Old Graham met that hint with a flash of his old temper: "Compromise! Son, Eb Patrick told me once to go to hell. He don't get any chance to say it again. I made up my mind right then that there would never in this world be anything between him and me but fight, as long as there's anything left to fight about. If you talk to me any more about compromisin' with him, you're no son of mine. If I could know this was his doin' I'd take my damnation before I'd say 'compromise.'"

Gordon laughed. He had nothing more

to say. Old Graham got to his feet heavily, staring over the plain.

"Anyway," he said, "it's good to have you back. I reckon this proposition needs a little youth in it." But then he cried out in sharp raillery against his own saying. "Youth! Look at that desert! What does it care for youth? Why, it lives on youth! It's fed itself on my youth and the youth of hundreds like me—just sucked the livin' youth all out of us and left us dry and dead."

There was a long silence. Old Graham was too weary to hold the tension of that mood. After a time he spoke again, but in a detached sort of way, as if he voiced a mere whim of the mind:

"Acts of God! I don't know whether I believe in that or not. What was it about Aaron smitin' the rock with his rod and fetchin' the water? I remember. That was a miracle. And there was that other thing about faith movin' mountains. I remember that too. If you had faith enough you could say, 'Remove hence to yonder place!' and the mountain would do it. I don't know, boy. There are some quaint things in the books. A man don't have to believe 'em. But I'll tell you what I'm just about ready to believe: There's nothin' but a miracle can give us back our water for these ditches. And the days of miracles are gone."

Perhaps it was the unwonted despondency of that saying that roused Gordon. He too got to his feet.

"Things may happen right now, just as good as anybody's miracles," he said. "Dad, somehow or other I'm going to beat this thing."

The light of the old flame shone in Graham's eyes, but his tone was that of one who indulged a youthful vagary.

"Well, maybe you think you can. Thinkin' so is part of doin' it. Go to it!"

In the days that followed, Gordon all but

lived on Painted Mountain, seeking tirelessly for means to accomplish his declared intention. What he discovered was no better than a blank wall of impossibilities. There had been a satanic sort of completeness in the catastrophe. Nothing might be done at the lake's rim unless he worked openly, and beyond all doubt that would mean that the Patrick outfit would block his work. He knew they were on the watch; for once or twice he saw Patrick's men wandering on the heights as if they maintained a lookout.

One circumstance tightened his resolution mightily, though it gave him no clue to what he could do. Exploring the mountainside, he found at the head of the great slide abundant evidence that Eb Patrick's hand, not God's, had wrought the mischief. Explosives had been used to free the masses of rock at a point where their fall would release a vast accumulation of earth and refuse and send it plunging down. Plainly the line of its fall had been measured, calculated, its effect roughly determined. Effort had been made to obliterate traces of this work above, but Gordon discovered enough.

What he found he kept to himself. Everything he did, the evolution of the whole problem, was kept for his own secret counsel until he would find the way he sought.

A week went by, a fortnight. Nothing! Not despair, but a sense of discouragement assailed him. Had he been anything less than Graham Llewellyn's son, more than once he would have taken the common way of succumbing to the apparently inevitable. Being what he was, he held on.

And then one morning, exploring a little aimlessly, he stopped to rest in the mouth of one of the caverns where the Cliff Dwellers had built of old. The retreat was cool, and he loitered within the shelter of the ancient wall, idly taking account of the crumbling ruin. By and by he set a cigarette between his lips and struck a match. The flame flickered out; another, and another. His mind was not yet awake to the trifling circumstance. Then it struck him suddenly that a steady draft of cool air came from the rear of the chamber, where a second wall was half fallen. Curious, he went back and peered beyond. Back of the wall was an impenetrable depth of blackness, and out of the depth

[CONTINUED ON PAGE 51]

Why My Meals Are Interesting Now

By Edith M. Updegraff

HAVEN'T many of us said in despair: "What shall I cook for dinner? Oh, I'm so tired of planning three meals a day!" I used to think I could never plan another meal, and if I did it was just the same thing over again. Yes, that's it—many of us get in a rut and do not realize that planning three meals a day is really a business. I have found that with a little more thought and study about the selection and preparation of my food my cooking is far more interesting, and not a drudgery as it used to be.

There are a few good points I always keep in mind; namely, *variety of foods, balanced meals, and attractiveness of serving.*

To me, variety of foods is the most important of all, for by having variety we have balanced meals, and usually attractive ones. We must have variety in our meals, for none of us care to eat the same meal day after day.

"But," you will say, "Friend Husband never likes anything but steak and mashed potatoes." Just try him on something different. Jack looks forward to his meals now as he never did before, and never knows when he is going to have a new dish. With the large variety of foods, such attractive and appetizing ways of serving different vegetables, meats, etc., I have found one of my problems solved.

I take more thought and care in the preparation and combination of foods, especially now since prices of all foods are so high. I am trying to reduce the cost and still have good meals. One important saving effected by using vegetables. There is not another class of food that can be used more, and in more different ways.

When I cannot afford to have meat I substitute a good combination of rice, with ground ham or cheese and tomato sauce. Macaroni with cheese, kidney beans, or peas also make good meat substitutes. Vegetables form an important part in our diet, and a main part in nearly every meal.

To some housewives the words "a balanced meal" do not mean much, but if we have nutritious meals we must have some idea of good combinations of foods. Most of us know a starchy food from a protein food.

Have you ever been served a meal like this: Baked macaroni, mashed potatoes, and rice pudding? That meal and many other poor combinations are often served, when, to think about it, all those foods are starchy. The meal is dry, unbalanced, and uninteresting.

In every meal I try to have the five different groups of food represented. First, foods for mineral matter or acids, such as fruits and vegetables; second, protein foods, such as milk, eggs, lean meat, beans, peas, cheese, nuts, etc. Then there are foods for starch, as cereals, flour, meal, potatoes, etc. Fourth, foods for sugar, jam, honey, preserves, dried fruits, cakes, and desserts. And fifth come the fats and fatty foods, such as butter, cream, bacon, oily nuts, lard, drippings, etc. All these various foods go to make up body growth, some for fat, some for muscle, some are blood-regulating foods. With children in the family, I consider it very necessary to have meals balanced and nutritious. By having one food from each of these groups at every meal we have a happy, healthy family.

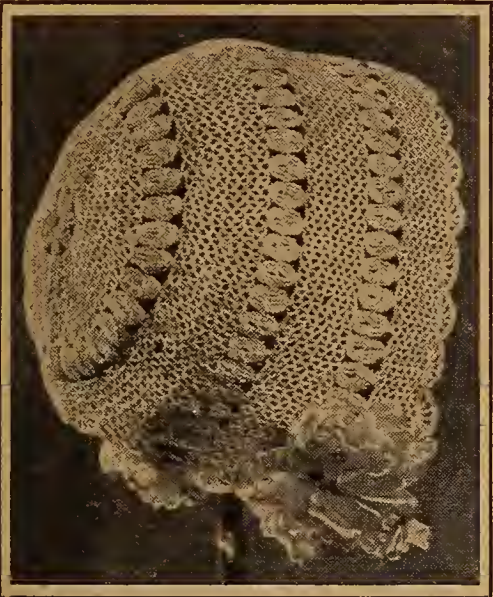
Another point I consider, which helps a lot in getting up a good meal, is the attractiveness of serving. In using my leftovers I try to make them just as attractive as possible.

There is a certain psychological effect that food has on one's appetite. If a food looks good it usually tastes good. A sprig of parsley, a piece of mint, or a dash of paprika, will make a salad. In desserts, a few ground nuts, a few red cherries, small pieces of fruit, or a dash of whipped cream will give a dessert that delicious look which makes our family say, "That's the best dessert I ever ate!"

These are just a few points which I always keep close in mind when planning my meals. You will find your three meals a day will be much more interesting and much more nutritious by working them out in this way.

The following are a few recipes that are favorites with us. I have found them very economical, and very easy to prepare:

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CASSEROLE OF RICE AND MEAT

3 cups rice
1½ cups tomatoes
2 cups meat, chopped and cooked
1½ cups water

Mix rice with tomatoes and water, place alternate layers of the mixture and of chopped meat in a baking dish. Cover with bread crumbs, and bake until brown in a moderate oven.

KIDNEY-BEAN STEW

1½ cups kidney beans
2 cups canned tomatoes
½ cup rice
2 tablespoons flour
1 onion
1 teaspoon salt

Cook the beans until tender. Wash the rice, and cook until tender; add onion if desired, and tomatoes which have been thickened with flour. Add to beans, and heat thoroughly. This is an excellent lenten dish for lunch, as it substitutes for meat.

GLAZED ONIONS

Peel small onions, and cook in boiling water fifteen minutes. Drain, dry on cheesecloth, add highly seasoned brown stock to cover bottom of dish. Add melted butter, sprinkle with flour and salt, and bake until soft and brown, basting with stock in pan.

BUTTERSCOTCH MERINGUE SHELLS

3 whites of eggs 1 cup sugar

Beat the egg whites very dry, and add sugar by folding in. Drop by large spoonfuls on an oiled baking sheet. Bake in a very slow oven.

BUTTERSCOTCH SAUCE

4 cups brown sugar 1 cup cream
2 tablespoons butter

Mix thoroughly, and let cook until a good sauce mixture. Scoop out meringue shell, fill with ice cream, or cream filling, pour over butterscotch sauce, and serve with whipped cream.

APPLE-SAUCE CAKE

1½ cups apple sauce ½ cup butter
1 cup granulated sugar 1 tablespoon hot water
2 cups flour 1 teaspoon soda
1 cup seeded raisins 2 egg yolks
1 teaspoon cinnamon 1 teaspoon cloves

Cream the butter and sugar, add dry ingredients, beaten egg yolks, then apple sauce. Beat thoroughly, and bake in a moderate oven. Use white icing on this cake.



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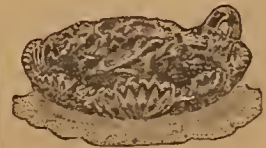
What is home without a piping-hot mince pie every now and then? And how your men folks do appreciate a tempting new dessert or relish once in a while!



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None Such Sandwiches



None Such Relish

None Such Jelly for Dessert—1 package of Jiffy-Jell (either lemon, orange, or loganberry), nuts and None Such Mince Meat. Before serving, cover top with whipped cream, sprinkle with finely chopped nuts and place a cherry in center.

None Such Pudding—(Recipe using left-over biscuits)—4 or 6 biscuits; 1 cupful dark corn sirup; ¼ cupful brown sugar; ¼ cupful butter substitute; 2 egg-yolks; 1½ cupfuls of None Such Mince Meat; 2 egg-whites.

Soak biscuits in warm water until soft and add the other ingredients in the order given. Beat egg-yolks thoroughly before adding. Mix ingredients completely, put in a well-oiled baking-dish and bake thirty minutes in a moderate oven. Make a meringue of the egg-whites, heap it on the pudding and allow to brown in the oven.

None Such Sandwiches—Cut slices very thin. Make a filling of None Such Mince Meat, to which may be added onions, celery, pimientos. Use crisp lettuce leaf.

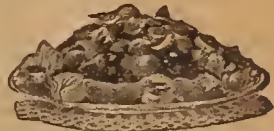
None Such Salad—None Such Mince Meat, oranges, grapes, celery and marshmallows. Chill and serve on lettuce leaf.

None Such Relish—Mix None Such Mince Meat with green or red peppers and onions.

Tomato Stuffed with None Such—Scoop out tomato. Mix None Such Mince Meat, celery, green peppers and onions. Fill the scooped-out tomato and serve, after chilling, on plate garnished with parsley.



None Such Pudding



None Such Salad



Tomato Stuffed with None Such

Try other recipes printed on the None Such package

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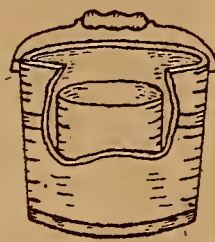
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Handy Household Devices That Will Help You With Your Work

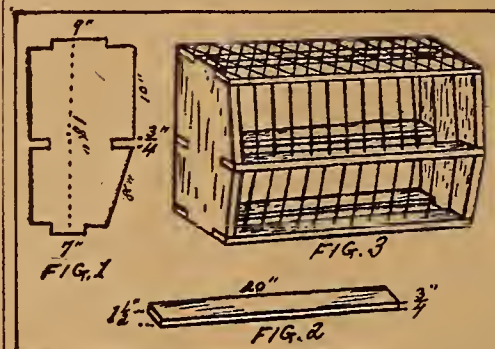


WHEN you want a fireless cooker, have your husband make you one from a large candy bucket or lard can. Either of these is excellent for a cooker, and will be found less clumsy to handle than a box.

Line the bucket or can, whichever you happen to use, with heavy paper, and put a four-inch layer of bran on the bottom, packing it down solid. Bran is better than hay, generally used, as it packs closer and does not need renewing as often. On top of this layer of bran place a tin bucket having a close-fitting lid, and large enough to hold your cooking pail inside. Pack bran in solidly around this, then cover the filled space with a circular piece of cardboard or heavy tin, having a round hole cut in the center to allow the lid of the tin bucket to extend through about an inch.

Make a circular pillow of muslin, stuffed with bran, to fit in snugly over bucket lid and covered bran space. The pillow should be four inches thick. This is then covered with the lid accompanying the candy bucket or lard can. To use, set your vessel of boiling food inside of the tin bucket, place lid on tightly, fit bran pillow down on this, put on large outside lid, and you have as fine a cooker as one could wish.

J. L. H., Ohio.



A Home-Made Dish Drier

OF ALL the devices calculated to facilitate kitchen labor, a dish drier is probably the greatest step-saver. With it one can master a heap of soiled dishes with wonderful rapidity. Such a contrivance is most easily made and consists of anything that will hold the dishes, with the fewest number of contact points possible, in such a position as to permit perfect drainage.

The illustration shows a simple design in which the plates rest in two tiers on horizontal bars of wood, and are held upright by vertical rods of hard-wood or galvanized-iron wire. The two lower horizontal bars are set closer together, so that small plates and saucers may be held in the bottom tier.

On top is tacked a piece of galvanized wire screen, about one-fourth-inch mesh, forming a shelf for such dishes as will not enter the tiers. Fig. 1 in the illustration shows the shape and dimensions of the two ends, while Fig. 2 gives the dimensions of each of the six horizontal bars. Fig. 3 shows how the drier looks when completed.

The drier is fastened securely to the wall just over the sink or drain board. Two dish-pans are used with the drier, one with very hot water, and the other with hot, soapy water. The dishes are first washed in the soapy water, then passed to the clear, hot water for a few seconds, and thence to the drier.

J. L. H., Ohio.

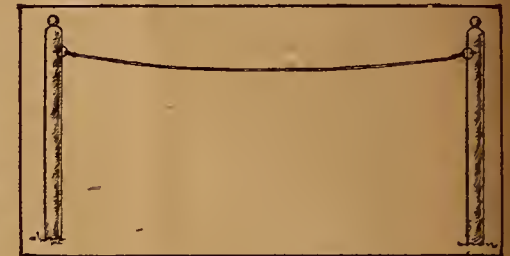
A Clothesline That Saves Clothes and Fingers

NOT wishing to leave my clothesline out of doors, I devised the following: I place iron rings or wire loops on building, tree, or posts (by means of staples) where I want my clothesline to end. I tie snaps, such as are used on tie ropes, on my line, and fit the line between the rings. Then I simply have to snap my line into place on wash days, and in case of a sudden shower the line, clothes and all, can be taken down in a very few seconds by just unsnapping the line and keeping it taut, if there is danger of soiling the clothes from touching the ground.

I find this simple device of most use in

winter, when, instead of freezing my fingers and tearing the frozen corners of clothes, I just take clothes, line and all, in together, and let them thaw before removing the clothes from the line. By this means my line lasts longer, the yard is not disfigured by unsightly clotheslines, and the clothes are not torn in winter, as is so often the case. Last, but not least, my hands are not unnecessarily frozen.

Miss M. G. C., New York.



How to Fit Your Own Dresses

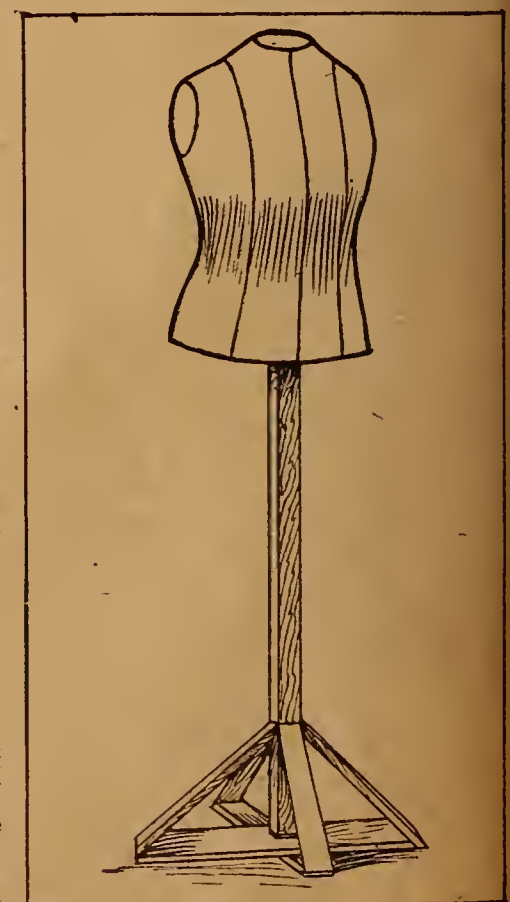
TAKE a good grade dark dress lining, a paper lining pattern of proper size, lay on lining, and cut carefully, not cutting neck or armholes so deep as pattern, and cutting a deep hip length. Baste all seams.

Put on a plain corset cover, and over this your corset. Put on, and fit the basted lining carefully, fitting arm and neck snugly, also fit shoulder, hips, and bust carefully and smoothly. Mark front closing at exact line of joining, and mark the length on your hips. Remove, and sew one-half inch deeper than basting thread, with a short machine stitch. Sew also the front closing where marked, to within about six inches of the neck. Sew round pieces of material in armholes.

Measure around hips at place marked, and from a light piece of board cut an oval piece the same size, with large-headed tacks tack to bottom of lining. Measure from same mark to floor, and make a standard this high. Nail oval board securely to standard, and stuff tight with excelsior. To keep from bulging while stuffing I put my corset on the form. A straight piece of correct size for neck is sewed on, and closed at top with round piece, after having finished sewing up front seam. Now fit your dresses.

I made a head and wig from hair combings, which is unnecessary, but lots of fun.

Mrs. V. W. K., Ohio.



Your laundry work yellow? Insufficient rinsing may be, and very likely is, the reason. Many liquid bluing on the market, at present, are iron compounds. If any soap is left in the clothes it decomposes the bluing, freeing the iron, which leaves the yellow streaks on the clothes.

*Bertha
had a cracked
lip*

It was painful—and disfiguring, which was even worse. She remembered what she did for chapped hands and put on

Mentholatum

Always made under this signature *A. H. Hyde*

It healed the poor lip gently—the very next day it was better—and all well when “her” Joe came on Sunday.

It was a friend in need

Mentholatum stops a head cold too—apply it to the nostrils to restore free breathing.

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UNITED STORES CO., Box 405, Lancaster, Pa.

“Remove Hence to Yonder Place!”

[CONTINUED FROM PAGE 48]

came the wind he had felt. He could see nothing but the abyss of darkness.

Moved by curiosity, nothing else, he found a dead knot of fat pine, inflammable as oil. With that for a torch, he clamored through the gap in the inner wall. His light revealed the sides and roof of a passage leading inward and upward at a low incline. Slowly, with no definite intention, he followed as the way opened.

At first there were tokens of old habitation, but he passed beyond these. There was nothing to deter exploration; the passage had no confusing branchings large enough to let him lose his way. He kept on, interested, a hundred yards, two hundred, and then he knew that he had passed more than a quarter mile into the heart of the mountain, going always gently upward.

He stopped at last. He had not come to the end, but a steady drip of water from the roof was wetting his clothing, chilling him. Water! Like an actual shock the significance of it flashed into his mind. He knew that he had traveled far enough to take him beneath the lake. His exact position he could not guess save by an undependable sixth sense of direction, yet he was sure of the fact itself. The rocky bottom of the lake was over his head; that drip must be seepage through fissures. Yes, but through what depth? Vaguely an idea was taking form. Its very audacity made it seem ludicrous; yet, outside, drying his clothing in the sunshine, he sat for a long time, considering, adding item to item in his thoughts.

It was a man's job he set for himself, working alone underground with compass and measuring line and such rude means as he could contrive, running levels, establishing directions, fixing distances. Two or three days of that strengthened his assurance, gave form to his planning. Much remained to be done outside, with the use of his half-forgotten knowledge of mathematics. He ran his lines over and over again, to confirm his calculations. After ten days he was sure.

The point he had reached on that first day in the cave had taken him directly under the lake at a place where the water stood ten feet deep in the basin. Six or eight feet of rock separated the lake bottom from the cave's roof. The pitch of the floor gave a steady fall toward the entrance.

His plan was made. What tax it would put upon his resources in initiative he did not know; but somehow he meant to blast through the cavern roof and tap the lake at its bottom for a new supply of water. At first, when the idea was no more than a wild inspiration, it had seemed a piece of impertinent effrontery, but day by day of familiar dwelling upon it gave it at last something of the substance of a plan which, for all its undiscovered difficulties, was not helplessly impossible. He would try!

NOT a word to old Graham. Not a word to anyone. He was determined to succeed or fail alone. He dared not risk discovery. With infinite pains every detail of his labor made the greater by the need for secrecy. He smuggled up the mountainside the tools and supplies he would need. His portable engine and drill equipment gave him the hardest struggle. Once he had it at the cave's mouth he was obliged to build a rude sledge of poles and drag the load by slow stages over the rough floor to the place of use. Poles and materials for his scaffolding he carried in piece by piece upon his shoulders. It troubled him to keep lights burning while he relied upon his torches of pitch pine. After a while he set a score of oil lanterns at intervals. Even so small a detail made much labor and consumed a lot of time. Another fortnight passed before he was ready to begin the real work.

A fine exhilaration possessed him in that moment when he climbed to the table of his scaffolding, set his drill against the rock, and felt the grinding grip of its bite. Those moments come to the man who dares. But they don't endure. Gordon's moment of thrill passed quickly as he felt the first aching strain of supporting the heavy tool in his awkward posture, working directly overhead, keeping it steady and maintaining a firm contact. To relax was to let the drill slip and twist. His lantern light was wretchedly insufficient. He was heavily encumbered by the oilskin coat he must wear for protection against the chilling drip. Five minutes and the sheer physical tension became intolerable,

[CONTINUED ON PAGE 54]

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All Statements Approved by High Dental Authorities



See What it Does for Your Teeth

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You have found, no doubt, that brushed teeth still discolor and decay. The methods you use are inadequate. There is now a better way.

The cause of most tooth troubles is a film. It is ever-present, ever-forming. You can feel it with your tongue.

That film is what discolors—not the teeth. It is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea.

That film is clinging. It gets into crevices and stays. So, despite your

brushing, it may do a ceaseless damage. Teeth are safer, whiter and cleaner if that film is absent.

Science Now Combats it

Dental science, after years of searching, has found a way to combat film. Years of careful tests under able authorities have amply proved its efficiency. Now leading dentists all over America are urging its adoption. It is now used daily on millions of teeth.

This film combatant is embodied in a dentifrice called Pepsodent. And a 10-Day Tube is offered to every home for testing.

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to day by day combat it.

For long this method seemed impossible. Pepsin must be activated, and the usual agent is an acid harmful to the teeth. But science has discovered a harmless activating method. And that discovery opens a new teeth-cleaning era.

The results are quickly apparent. A ten-day test is convincing. We urge you to make it at our cost and learn what clean teeth mean. Lest you forget, cut out the coupon now.

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Look in Ten Days

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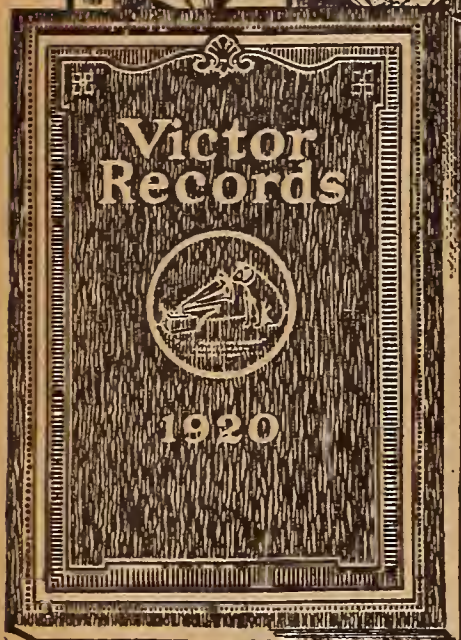
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Wells and Richardson Co., Burlington, Vt.

A Nonsense Social

By Emily Rose Burt

THE young people will all want to come to it, and the older people, young in spirit, can't keep away either. Besides, the notices posted around town may be worded so that no one need hesitate for fear of being thought frivolous. Print them thus:

"A little nonsense now and then
Is relished by the best of men."

So

Why not put in a jolly evening at
a Nonsense Social next Friday at the
Congregational Church Parlors
Admission 5 senses

First of all, there will be jokes on all the people who think they have puzzled out the meaning of the admission price and try to pay a nickel. But the real amusements of the evening will consist among others of nonsense contests.

Announce that for fifteen minutes there will be a deaf and dumb interval, and that all conversation and communications must be carried on by signs. If everybody enters into the spirit of it, it will be exceedingly jolly.

Following that may come some blindfold stunts. One that is always good sport is blowing out the candle. The contestants are in turn blindfolded, turned around three times, and headed for the lighted candle. The object, of course, is to blow it out, and there are sure to be all sorts of ludicrous results.

A good way to carry out another contest in which the sense of smell is featured is to provide a variety of food samples which each contestant must identify with eyes closed and nose held tightly. Cooked oatmeal, bread, cake, loaf sugar, a piece of banana, a bit of potato, all are mystifying without the sense of smell to aid the sense of taste.

After the "nonsense" contests may come some "sense" contests.

THE SIGHT CONTEST: Fill a table with a great variety of objects, and allow everybody a minute by the clock to observe it, after which each person writes down a list of what he or she remembers. A prize may be given for the longest list—for instance, a pair of rose-colored goggles.

THE HEARING CONTEST: Let a versatile musician play snatches of tunes on the piano, varying from Handel's largo to K-K-Katy. The contestants, provided with paper and pencil, write down the titles as fast as they recognize them. Again the owner of the best list may receive a prize—a mouth organ or a tin horn, or something musical or pseudo-musical.

THE FEELING CONTEST: Arrange an assortment of objects for each contestant, blindfolded, to be identified by touch. Such things as a carrot, a piece of crayon, a glass paper weight, a leather case, a piece of sponge are suggestions for such a test.

THE SMELL CONTEST: This is an old stunt, but fits in here. Prepare several little plain bottles and fill them with different liquids, all having an odor. Some should be enough alike to make discrimination hard, as, for instance, lily-of-the-valley perfume, carnation perfume, white rose and violet, vanilla, almond cream, bay rum. Fill one bottle with clear water and notice the different odors assigned to it by the contestants.

After these tests, let the nonsense element enter again.

Here is a nonsense game that is great fun if everyone is in a happy mood—it is called "You Have a Face." All sit in a circle, and the game starts when one person turning to his right-hand neighbor remarks, "You have a face." The other asks "What kind of a face?" The first person replies, using an adjective beginning with "a." Thus he may say, "an angelic face" or "an ambitious face" or an "anarchistic face." The right-hand neighbor then in turn tells his right-hand neighbor that he has a face, and so it goes

around the circle. The second time around, "b" may be the initial letter of the face adjective.

There is nothing personal about the application of the adjectives, and often the incongruity of them with the faces to which they are applied makes hilarity run high.

A nonsense program could be arranged as a climax to the evening if desired.

The refreshments may be announced as appealing to the sense of taste and sight. Perhaps oyster stew would be "sensible," or the conventional coffee and sandwiches may form the menu. A truly nonsensical menu might consist of orange ice and lady fingers or some other very airy wafers.

For souvenirs pass around a tray of "purple cows," paper ones of course, with Burgess Johnson's famous rhyme on each:

I've never seen a purple cow,
I never hope to see one;
But this thing I know, anyhow,
I'd rather see than be one.

NOTE: Suggestions for a Nonsense Program will be sent on receipt of a stamped self-addressed envelope. Address Entertainment Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

Can You Afford Running Water?

[CONTINUED FROM PAGE 20]

and don't have other conveniences. I really get disgusted with such stories. If a man is made to realize what a help a thing will be he'll want it too. If a man's machinery wears out and he has to have new, or repairs, we don't know it's needed until he says something about it. How should he be expected to know what we women need in the house unless he is told? Mr. Foster and I always talk things over—we're partners, why shouldn't we?

"I really think it's the fault of the woman herself when she works so hard. But so many farm women have never known anything else, and so are content without conveniences. That was the way with me, I know. I didn't miss running water before I had it."

And what conclusions would you draw after being talked to like that? I came home feeling that there was not a doubt about it—the question to which I had started out to find an answer had been answered in the affirmative, and most emphatically.

I haven't said anything about the various water systems themselves, nor their cost, because that is a matter you can find out about better by writing to your state experiment station or agricultural college, or by writing to the Department of Agriculture at Washington, D. C., in care of

Edwy B. Reed, Division of Publications. The big point I wanted to bring out was what these farmers' wives said about how their water systems have paid for themselves over and over in the time saved, the drudgery done away with, and the comforts added to farm life.

If there are any other things like this that are of peculiar interest to you as a farmer's wife, write and tell me what they are, and if there seems to be a lot of interest in certain things I will go out and see what I can learn about them, as I did about this.

Wood Ashes Will Do Many Things

By Nancy D. Dunlea

WOOD ASHES will clean the bottom of porcelain kettles.

Porcelain sinks and toilets are easily cleaned with wood ashes.

Wood ashes will keep an icy front walk from being dangerous.

Tea stains in china teacups are easily removed with a little wood ashes.

Grease spots on marble and tiling may be removed with a mixture of wood ashes and water boiled together for one-half hour and thickened to a paste with whiting.

Equal parts of wood ashes, salt, and water made into a soft paste will fill up the cracks and holes in a stove satisfactorily, if applied while the stove is cold.

Government Army Blankets Parcel Post \$7.50

One-piece Wool 4 lb. Blankets 66 x 84

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Each and every pair has been inspected by Government inspectors for Army use. First quality four-buckle arctic, double sole and heel—snow, cold and damp excluder. In all sizes. Give size of shoe you wear.

Your money back if you want it.



All-Rubber Overshoe \$3.50

The Tale of a Tail

(CONTINUED FROM PAGE 46)

circling about the tree, at a short distance. "Again he got out of breath, chasing the tail, and ran to the stream for a drink. While at the water's edge he had a chance to use the stream for a looking-glass, and then he realized how homely he was without any tail.

"May I not have any tail at all?" Mr. Bunny moaned to the little lady.

"Ask me while you look at my poor body with no tail!" roared the badger, who again appeared in place of the lady.

"You have a stub left, and that's something!" wailed the bunny.

"Well, it is true, and I will see to it that you have as much tail as you see on me," the badger grunted, a little more kindly. He then picked a milkweed pod, drew the fluffy contents from it and, with a motion, beckoned the rabbit to follow him. The two walked to the stream, where the badger gathered a pawful of mud to which he stuck the milkweed-pod's contents. Said he:

"Now, Rabbit, you are about to see me no more. When I go you will, if you look to the west, see me as the lady of the milky way, going up a moonbeam to my sky home. Think, as you look upon me, about your selfishness and what happened to you for it. Throughout all the years to come, rabbits will have a chance to regret your action, and they will also seek tails that will never be theirs. Run!"

"The badger threatened the bunny with the mud ball, and the bunny ran. As he went, the badger threw the cotton from the milkweed pod, and the mud caused it to stick where the bunny's tail used to be."

Mr. Bunny ceased talking, and the possum, who had been listening very carefully, saw that his companion's nose was bobbing, bobbing all the time.

"Tell me," Mr. Possum asked, "why do bunnies keep their noses bobbing all the time, friend?"

"Because we are always trying to find our tails," was the reply. "When a rabbit is chased, nowadays, by a dog or anybody else, he immediately thinks of the badger, who chased his ancestor around a tree, and he runs in a circle, trying to see his tail just ahead. Of course, no rabbit has ever seen a tail floating in the air around a tree since



Bunny wept great tears, thinking the little lady would relent and help him get his tail

that time, but we live in hope. We keep our noses bobbing so we can be sure to scent out the tail, if one be anywhere near, although we cannot see it. We hope that the little lady of the milky way will let us have a chance to regain our tails one day."

Bunny wept just then, and a big fly lit on his back. Mr. Possum, who saw the fly, kindly brushed it off the bunny's back. Said he, as he shinned up the tree again:

"Friend Rabbit, it shall never be said that I refuse to help a fellow creature. Indeed, I shall never lose my tail that way!"

Bunny cried bitterly, and the harder he cried the harder his nose bobbed.

It has never before been known for sure why a rabbit always runs in a circle when pursued, or why a rabbit bobs his nose all the time; but now you know, and everybody who reads this tale knows.

And that is why this story is called a Tale of a Tail.

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WE WOULD like to hear how you boys and girls like this story. We will appreciate it if you will write and tell us why you like it—or why you don't like it. And if you want to see more of them, or stories of a different kind, we wish you would tell us. Will you do this? THE EDITOR.



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"Remove Hence to Yonder Place!"

[CONTINUED FROM PAGE 51]

though his drill had done no more than scar the rock's surface. He stopped, and spent half a day building a light frame above his scaffolding to make a support for his arms while he worked. When evening came he had cut only two inches deep in his first hole. But it was two inches! No matter now about the difficulties, he could vision success.

It happened that on that night he found his father perturbed, distraught. Through most of the month, through Gordon's persistent silence, the old man had been quiet enough, thinking his own thoughts, making no protest and no outcry. To-night, when supper was over, he sought Gordon and spoke directly:

"I ran across Eb Patrick to-day, comin' from town. He made me an offer to buy me out, land and cattle and all. Fair, I reckon, considerin'."

Gordon waited, curious. Suddenly, through the odd mask of stiff lines anxiety had wrought upon his face, old Graham grinned.

"I guess I ought to have taken him up. But I didn't. I told him to go to hell. Near two years I've been waitin' for that chance. I was afraid it wasn't comin'. But I don't care what happens. Sink or swim, I've broke even with that swine. I just thought I'd tell you, in case you've been worryin' on my account. You needn't any more. I've had my satisfaction."

GORDON went back to his work after that with new zest, a zest that did not flag, though the task taxed him to the uttermost point of endurance. However firm his resolution, ten or fifteen minutes at a time was the extreme of what he could manage with his drill. He knew that his contrivances were clumsy, his handling of them grievously inept. He was able to make small improvements from time to time, but he was five days in completing the first hole. Toward the last his progress was painfully slow; he found that his engine power was not enough when his drill went deep. He had to master a little trick of humoring it, nursing it along. He had calculated that he must make five other holes like this before he could venture to set his blast.

Often he was forced to quit his work, to seek the sunlight outside for an hour or two, to renew the life in his numbed body. There were even whole days when, utterly spent, he loitered on the mountainside beneath the pines, husbanding his strength jealously for renewed effort. At times, in the profound depression of great weariness, he derided himself mercilessly for a fool in undertaking such a job single-handed. He had his hours of doubt, of black discouragement; but they would pass and he would go back to his task, grinding inch by inch into the rock.

The day came when he set his charges, fired his fuses, then sat waiting outside in an agony of suspense. The force of the explosion when it came made itself felt at the cave's entrance, shaking down fragments of the old wall. Gordon listened, walked a little way into the passage, his senses strained to the snapping point. In the depths was silence. He knew that his first effort had failed. Heavy-footed, heavy-hearted, he went back to explore, carrying a lantern.

He had almost succeeded! The charge had unmistakably shattered the rock to the lake bottom, for through a widened fissure water was pouring steadily. Huge masses of rock had been torn from the roof, wrecking his scaffolding, burying the fragments. But the flow was not enough, the refuse on the cave floor absorbed it all within a hundred yards of its source. There was more work to be done. He must set up a new scaffolding, building it higher. It was certain that the new work would have danger added to the old difficulties. The blast had loosened rock masses on the roof, but left them hanging precariously. One fell while he stood considering. He would have that to guard against.

He could not take up the work at once. He spent a day or two outside, gathering strength of will and body. And in that he found an extra compensation.

He was at the border of the lake, idling, when Eb Patrick came riding round the rim with one of his men. Gordon hid himself, waiting, listening. Patrick's speech was violent, the man's apologetic.

"I've been a-watchin'," the fellow said. "Mr. Patrick, I ain't been away from here a minute, except when somebody come to

relieve me. I've been a-watchin' all the time. I'd swear on my oath there ain't been nobody out on the water. But I heard it, an' I felt the shake of it."

Patrick swore viciously, swore again when he felt that his rage was impotent. He seemed to have exhausted rational explanations of the report the man had made.

"Might've been an earthquake," he suggested futilely. "I've felt 'em here, times—little ones. It could be."

"But look at the fish!" the man objected. "Right after I heard what I told you, them fish come up. Every fish in this part of the lake come belly upward, and most of 'em is floatin' yet. A little bit of an earthquake wouldn't kill fish."

Patrick's profanity swelled.

"Then you've been sloughing on your job," he charged. "I'll tell you what I'm goin' to do—I'm goin' to put men enough on the mountain to watch right. I'll put forty of 'em up here if I have to. Them hellions are up to somethin', and I'm goin' to find out what it is if it takes all the men I can hire."

Gordon was glad of the warning. With all haste, before the new patrol might discover, he carried a supply of food into the cave, enough for days. After that he did not go outside till his work was finished. He dared not try to cut poles for the new scaffolding; instead, he built with stone. That took four days of racking labor. Then, mad with impatience and with an accession of strength whose source he could not fathom, he attacked the drilling again. When he was drenched through, powerless from cold, he warmed himself as he could beside a small fire on the cave's floor. The hours became meaningless; he kept no account of them, but worked when he could, resting when he must, his mind completely obsessed. Once his drill dislodged a loosened stone; in falling it struck his shoulder, cutting and bruising the muscles badly. He was indifferent to discomfort or pain so long as his work might go on somehow.

Three new holes he drilled, charged them with extra care, and set the fuses. When they were fired he dragged himself almost lifelessly toward the entrance. This was the ultimate moment. Failure this time would be defeat.

In the outer chamber of the cave he met one of Patrick's men. Apparently the fellow had but just found the place, for he stood blinking, half-blinded in the dusk. To him Gordon must have appeared very like an apparition, drenched, torn, disheveled, utterly spent. He stared, doubting.

"Well, I'm damned!" he said weakly.

"Llewellyn! What in the name o' God?"

Gordon took his arm, supporting himself.

"Come outside!" he managed to say. Without, he dropped full length upon the stony ground, worn beyond further effort of will. He hardly heeded the explosion of his charge back in the passage. So dulled were his senses that he could not be sure whether the sound he heard was the pounding rush of blood in his brain or something else. Patrick's man was on his feet, listening, gaping.

The far murmur swelled, gathered strong volume, became a smothered roar. Then from the cave's mouth burst the flood, turbid, white-frothed, laden with refuse gathered on its way, sweeping out all that remained of the ancient wall, flinging itself headlong over the rocks to the plain below—ample beyond all doubt for the salvation of the Llewellyn ranch.

IT WAS evening when Gordon found his father, riding out from the ranch house. The old man's protests were idle. Without a word of explanation Gordon walked at the horse's head, eager, triumphant, choosing the way till a sudden turn round a shaggy shoulder of rock revealed the cliff face of Painted Mountain, a mile distant. Over the sheer wall the new cataract was tumbling, shining, resplendent.

"There!" Gordon cried. "Look at that!"

Old Graham sat speechless in his saddle, awed, overwhelmed.

"It's—it's a miracle, boy!" he said softly by and by.

Gordon laughed aloud, exultant.

"A miracle!" he echoed. "Mine!" His indomitable humor rose to full tide. "The miracle days aren't past! I hadn't Aaron's rod, but I had a drill bar and dynamite—just as good! It's the truth, Dad—a man may work a miracle with anything he happens to have in his hands if he's only got faith enough in himself."

What Men Should Know About Babies

[CONTINUED FROM PAGE 19]

organizations or others may afford the nucleus of a health or general welfare association through which a nurse, or perhaps a "baby special," might be secured. In many places there exists what is known as a community council, an organization of the neighbors who discuss together, and decide where local measures are most needed in the given locality and how to go about securing them.

Exhibits and demonstrations on infant welfare work at local meetings of every sort may be given in connection with county or state fairs, grange meetings, church or school associations, or on any other occasion when there will be sufficient time and space to give the people opportunity to look at them, and hear the talks which should go with them. Information about how to start a demonstration of this sort will be sent by the Children's Bureau upon application.

It should be a matter of pride with every father and mother to be able to show to the world as nearly perfect a baby as their care and intelligence can secure. The baby should be born a normal, happy, healthy

being, its career should be marked by steady growth in weight, stature, and in the development of all its faculties.

The best manner of feeding, clothing and caring for the baby should be matters which the mother has studied under the best authorities, just as much and just as seriously as she would study the best methods of caring for roses, blooded fowls, or the canning of fruits and vegetables. When she has thus fitted herself to do this great work, she will be able to proceed with dignity and authority, and her babies will not be the subject of constant and uncertain experimentation. She will understand the characteristics of healthy babies, and will know when hers are not up to the standard, and what measures she should take to bring them back.

In short, the educated mother will bring all the forces of mind and heart—not only her love but also her trained intelligence—to the producing and rearing of the finest possible race; a race of citizens who shall be fit to carry on the high destinies of our young republic. And you, her husband, can help by making it possible, in time and money, to do this.



Another future citizen who had the proper start

The Way They Feel About Teacher

By Mrs. Margaret A. Bartlett

THE way the children feel about their teacher depends almost entirely on the way their parents feel about her—that is, if the way the parents feel is allowed to enter into their talk before the children, and it oftentimes does, to the detriment both of the teacher and the child.

For instance, a young teacher friend of mine said to me the other day: "What do you suppose little Doris Handy told me yesterday? Why, she climbed into my lap during recess, and put her arms around my neck in that loving little way she has; then she startled me by saying: 'Mama says you're just a little girl, and I can't expect to learn anything from you. She says we ought to have a grown-up teacher—but I like you better.'"

My friend smiled at thought of the child's affectionate words, then continued soberly and thoughtfully: "I suppose I am just a girl, but I'm trying to do my best as a teacher. Sometimes I get discouraged, though, and now, since Doris' mother made that remark before Doris, I'm almost afraid I'm going to lose control of the whole school. Doris won't take anything I say seriously; she has been told I'm just a girl, and given to believe I know no more than she does herself. And she has communicated her feeling to a good many of the other scholars. I really don't know how I am going to live down that accusation."

Seldom do remarks of a single parent prove so far-reaching in their effect on the teacher and the school, but always they affect the one child's conduct and attitude toward his teacher. The child coming to school with his father's rather blunt expression "That teacher of yours don't know nothing" ringing in his ears isn't going to buckle down to his lessons properly. Instead, since teacher doesn't know anything, he thinks, "What's the use of learning what she tells me to learn?" Or the child who, because of some misdemeanor was compelled to remain after school hours, was comforted at home with the assurance, "If that teacher keeps you in after-school night I shall take up the matter with the school board," is not going to come to school with the determination to be as good as possible all day long. He is, however, going to endeavor to get kept in so that his mother can cause trouble for the teacher. And in nine cases out of ten he succeeds.

Parent-teacher associations have done much to bring parents and teachers together for a better mutual understanding

of home and school conditions and aspirations. Yet there are many small communities which have not as yet such associations, and there are many mothers who could not attend the meetings even if they were held near at hand. But, whether or not there be a weekly or monthly gathering of parents and teachers, the same responsibility rests on the parents regarding the talk about the teacher their children hear at home.

Not always, of course, can good things be said of the teacher—yet very seldom is it that the children cannot be told that their teacher is trying hard to teach them right, that she is doing her best, that it is a hard task teaching so many active, eager little children, and that she needs their help every minute if she is to give the school a good name and record. But even though the parents do not consider the teacher as good as a previous one, or do not approve of her methods of teaching or correcting unruly scholars, there is no excuse for airing these beliefs before the children.

Every parent should take sufficient interest in the children's progress at school to feel approval or disapproval of the teacher's methods or ability, but discussion of the latter should be carried on when the children are absent. Whenever possible the teacher should be invited to the home, where problems presented by the children can be discussed when the children are not around, and the parent and the teacher can come to a better understanding.

But whatever your real feelings toward the teacher, if it be not good let no inkling of it reach your children's ears. Instead, pick out all the teacher's good points and hold them constantly before the children.

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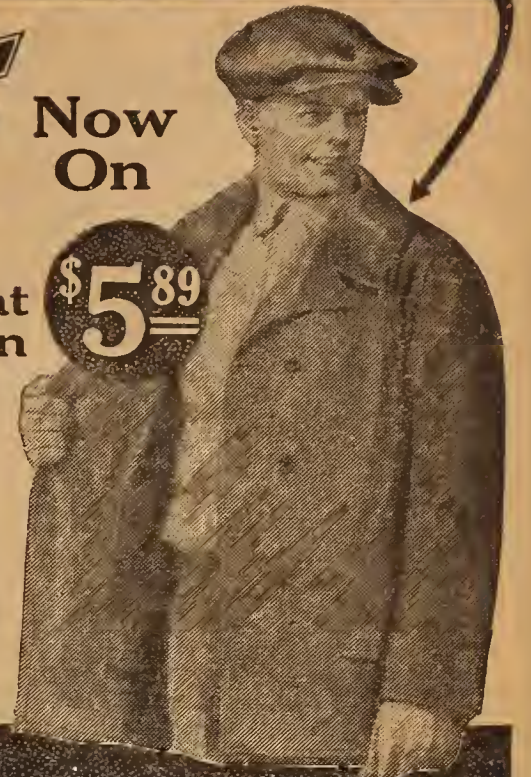
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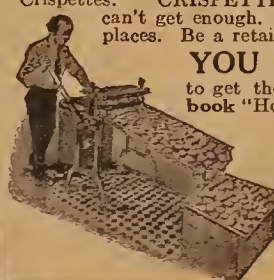
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You used to cuss when a passing auto made old Dobbin rear back on his haunches or snuffed out the lives of a couple of your chickens—but wait until a monkey wrench drops on your head—or your chimney is knocked into the next lot! Dodging airships is becoming the newest and most fashionable step. Not so far away, either. Two flyers recently went through the roof of a house into a lady's boudoir; a New Jersey pastor had an aviator arrested for keeping away his congregation. Henry Woodhouse, editor of "Aerial Age," tells you a host of amusing, true aviation stories in the February AMERICAN MAGAZINE.

Twelve million working days lost in two months!

Figure it up—580 important strikes during August and September—145,000 men involved. How do these strikes react on you? How do they affect your family budget? Your job? It takes Roger W. Babson to figure it all out for you. He is the head of the world's greatest statistical house. You want to get the truth on this question—whether you are a steel-mill king a laborer on strike, or simply a householder whose income is being strained by advancing prices. So read what Babson has to tell you.

He knows what we will do before we do it!

George J. Whelan operates 1,300 stores for the United Cigar Stores Company. He's starting new ones all the time—and he knows just how much business and what character of business each store will do before he opens it. Whelan can stand on a corner for a while and give you its value in dollars and cents. How he does all this, how he calculates in advance just what we'll buy and how much, why he sells candy in a cigar store, is an amazing understanding of us humans—our habits and our failings. Whether you buy or sell, you'll do well to take Mr. Whelan's tips.

Is your church table d'hôte or à la carte?

Do you have to take what you get in your church or do you get what you want? Here is the story of how a few people in one town made over a "table d'hôte" church into an "à la carte"—vitalized it—weeded out the influences that were undermining its strength—and made it the most serviceable, vital, important institution in the whole community. Just how they linked up the church with the good things in town makes an interesting and worthwhile story. Read it.

Does marriage clip the wings of youth?

When love pulls one way, and duty another, and ambition another—what is one to do? Here's a young man with big ambitions, a girl of eighteen with a beautiful voice—and nature reaching down to put their noses to the grindstone. Winona Godfrey weaves the situation into as fascinating a story as you ever read.

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Magazine

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AMERICAN MAGAZINE

COLLIER'S, The National Weekly

WOMAN'S HOME COMPANION

FARM AND FIRESIDE

How I Save Strength and Time on Washday

By Mrs. Frank Swanson (California)

I THINK one of the hardest jobs a farm woman has, especially if there are small children and men to cook for, is the washing. A large washing done in the old way means such a hard, busy day.

I was never very strong, and I finally got so that I could not do the large heavy washings in the old way, and found such an easy, efficient way that the washing to-day is my easiest work, and the clothes are beautifully white and much sweeter than if sent to the laundry.

The day before I wash I put all the white clothes to soak in cold water. If there are fruit stains on tablecloths, etc., I pour boiling water on them first. Either hot or cold water will remove tea, coffee, and cocoa stains; but I like hot best for cocoa, cold for milk and egg stains, and sweet milk for ink stains.

At night I wring the clothes out, and cover until morning. While getting supper I melt a bar of soap with a little water added in a granite kettle, adding a teaspoonful of lye and about two tablespoonfuls of coal oil. I let this boil up and set away until morning.

The next morning, as soon as the fire is lit, I put the soap solution in the boiler and fill half full of cold water. I put the white clothes in the cold water, and cover. After the water comes to the boiling point I let it boil about fifteen minutes. While the clothes are boiling I get the breakfast and dishes out of the way.

When the clothes are boiled (I punch them good while boiling) I put them in a tub of cold water; punch and rinse them well; wring, blue, and starch. Now they are ready to hang out, and even the roller towels and men's underwear are beautifully clean.

As soon as I take the white clothes out of the boiler I put enough cold water in to cool it—just enough so you can put your hand into it—then put the colored clothes to soak while wringing out the white ones. I soap all very soiled spots, such as on men's work shirts, etc. When I am ready for them, I simply punch them well, and very seldom have to use a washboard for anything.

I have a big washing out by ten o'clock, my floor mopped, and have time to rest before starting dinner.

That much soap will do a large boilerful of white clothes. The secret of getting such good results is in putting the clothes on in cold water. The cold water loosens the dirt and it boils out.

When I bring the clothes in from the line, I fold and put away many articles without ironing. Everyday towels, pillow slips, and all flat pieces I fold and run through the wringer and put away. Underwear if folded smoothly and pressed out with the hands looks as well as if ironed, and is sweeter and healthier.

possible to every prospective competitor.

In the marketing of his fruit the small grower must once more study the methods of the big grower, and then do something different.

It would of course be a great waste of his time to adopt all the fine points in grading and packing as worked out in the apple orchards of Oregon or the peach orchards of California. On the other hand, he can not safely follow the slipshod methods of the farmers of fifty years ago. Somewhere between these extremes he will find packages and practices better suited to his needs.

If he caters to a purely local market he will probably use open packages altogether. Of these the Climax grape basket and the Jersey peach basket are the two great types. These baskets he can use in his local markets for almost everything. In the 16-quart peach basket he can market his apples, pears, peaches, plums, as well as his string beans, peas, cucumbers for pickling, and even his early potatoes. In the Climax basket he can sell his grapes, his fancy plums, and his Leghorn eggs. He will of course need a supply of quart boxes for his strawberries and his bush fruits.

In this matter of packages, as on many other plants, he will accept the teaching of his customers rather than the instructions of the books. It is his business to let them have what they want in the way they want it; and if they call for raspberries in barrels or Hubbard squash in bottles, I, for one, would do my best to supply them—and charge accordingly.

The essential point is that the farm fruit grower must grade his fruit, pack it honestly, and take it to market in clean, attractive standard packages.



Fern and Forest Stroup at work

A Side Line of Fruit

[CONTINUED FROM PAGE 17]

has been proved by many thousands of infallible orchard tests that spraying is one of the best investments a man can make in his orchard. Even if it costs 50 cents a tree to do the job in May, the crop is likely to pay a good big dollar profit in November.

It is so easy in these days of agricultural magazines, books, experiment station bulletins, and county agents to get ready and reliable help on spraying questions, that no farmer has any valid excuse for going wrong.

Pruning is harder to learn, for it is more of an art and less of a science; but there is less need for instruction.

It is easier in this to watch the big grower and to adopt his methods without modification. There are in print thousands of pages of pruning instructions, but on this subject a good demonstration is worth a whole course of lectures. Personal instruction is what counts. There are very few farmers who cannot get such personal help from some competent instructor if they ask for it. The biggest and busiest fruit grower in the land would be chuckling glad to show and explain his best methods to any sincere inquirer.

This is one of the curious things often remarked of the fruit-growing fraternity—their cordial readiness to give every help

Independent at Thirteen

FERN and Forest Stroup of Smith Center, Kansas, though but thirteen years of age, have prospered in a financial way the last four years that would do credit to folks much older. Four years ago their father assigned them a garden plot and told them they could have all they raised from it.

The twins, then but nine years of age, set to work with a will, planting the plot to early garden stuff that they sold about town when it matured. They had early onions, peas, lettuce, beans, and radishes, and from the sale of these they cleared \$50 that first season. The money was used to buy a cow.

They have kept up their gardening activities each season since and, despite the dry years, have done remarkably well. They now have seven head of cattle worth \$400, and are planning a fine garden again for this spring.

Both go to school, and have long since ceased to ask their father for spending money. They are not only helping their country by increasing the food supply, but are also learning a lesson that will be of much value to them in later years. They are anything but loafers, and a few years hence will be listed among their country's prosperous and contented citizens, while a host of their loafing friends will be kicking against the Government and whining that they never had a chance.

We Save Money by Husking at the Barn

WHILE we always do a lot of corn-husking in the field each fall, we find ourselves growing more and more indisposed toward the method with each succeeding year. It has the one advantage of speed—that is, more husked corn can be put into the crib in a given length of time; but there are various other points to be considered.

For several years past we have been observing the methods of a farmer near us who makes it a point each fall to haul his corn shocks up and restack them in long narrow shocks around his barn and feed lots. Of course, he first fills what vacant space there is in the barn. Then he proceeds to husk the corn, and stack the fodder in large shocks right close to the feed lots, ready to be fed to the stock.

The advantages he claims for his system are these: The fodder if it is to be fed has to be hauled up some time, and the labor of the entire operation is about equal whether hauled up as corn fodder or husked fodder. When husked in the field the fodder has to be bundled; this requires quite an expense in the way of twine. As the bundles of fodder of three corn shocks are usually carried together to make one fodder shock, it means, besides the extremely unpleasant task of tying the bundles, the tiresome one of lugging them together and setting them up as a fodder shock. In the next place, there is always a great deal of leaves, husks, etc., broken loose while husking. If it is windy, this is blown over the field, and consequently lost. Furthermore, exposure to the weather spoils fodder very rapidly. By husking time, that on the outside of the corn shock has usually become spoiled. When the fresh fodder that is in the interior of the shock is bundled and placed in a fodder shock, it is simply exposing another lot of good fodder to the weather to become spoiled by the time it is needed for feed.

But the greatest loss is due to the shelling of the corn as the ears are tossed upon the piles at each shock. Some seasons this is worse than others, but at the best there are always a lot of shelled kernels left on the ground after the pile is picked up. As there is nothing in the field to get this, it is a dead loss. When at the barn or near the feed lot the chickens save it.

Last fall when picking up the piles of corn in the field, we counted the number of kernels under a number of piles. We were surprised to find how strong an argument our neighbor really had on this point. The number ran from 180 to 559, and averaged 339 grains per shock. This may seem like an exaggeration, and we ourselves would have thought our neighbor was stretching matters a little had he told us the same thing, but nevertheless it is a fact. The 339 grains of an ordinary size just about filled a common drinking glass, or are about one half the number of grains on a large ear. With corn the price it is nowadays, wasting it means wasting real money.

The saving of twine, the saving of fodder, and the saving of corn make us think more and more favorably of husking at the barn and at the feed lot.

P. C. G.

Are Animals Naturally Vicious?

IT WAS in the famous arena, now known in Mexico City as the Teatro el Toro, and which, bull-fighting having been forbidden by Carranza, is now the home of Grand Opera, that one of the most astonishing incidents in connection with the history of bull-fighting occurred. The record reads:

"A bull, El Bonito, known as one of the fiercest fighters, on being brought into the arena charged and killed three horses and injured as many men without being touched by the estoque of any matador.

"As the bull stood bellowing defiance, and with no one apparently willing to attack him, Miguel Ballo, a picador who was a spectator in one of the boxes, leaped unarmed into the enclosure. In his outstretched hand he carried two lumps of sugar, which he nonchalantly offered to the bull. The animal suddenly ceased its bellowing and in a few moments docilely licked the sugar from Ballo's hand. The latter returned unharmed to his box amid the plaudits of the spectators."

—"Our Dumb Animals."

What the small packers say about meat competition

During a recent hearing, a number of the smaller packers were asked for their opinions of competition in the meat industry.

The following quotations, we believe, are typical of the feeling throughout the entire meat packing industry:

Michael Ryan, President of the Cincinnati Abattoir Company, said: "I have been a competitor of the large packers for the last 40 years, and I have never found a disposition on their part to crush competition. . . . They have concealed nothing nor attempted any unfair practices."

T. Davis Hill, Vice-President Corkran, Hill & Company, Incorporated, Baltimore, asserted that: "The big packers cannot control the market for the reason that there are too many outside packers. . . . Some days the small packers make the market for the big packers. We have no fear of the big packers' competition. . . . The large packers have never tried to undersell us or drive us out of business."

G. H. Nuckolls, President of the Nuckolls Packing Company, Pueblo, Colorado, said: "So far

as profits go, my company has made a larger percentage on its turnover than any of the so-called Big Five."

J. C. Dold, President of the Jacob Dold Packing Company, Buffalo, New York, testified: "I recall no instances where we were ever hampered by any packer in the control of any stock or in the purchase of our supplies at competitive market prices."

John J. Felin, President John J. Felin Company, Packers, Philadelphia, Pa.: "I have known all the packers for years and have never seen any unfair dealings on their part. I know of no methods that have been adopted by any of them that were unjust, unfair or monopolistic."

There is probably no business in America more keenly competitive than the packing industry, and none that serves the public on a smaller margin of profit.

Swift & Company's profits during the first eight months of our present fiscal year have averaged two-fifths of a cent on each pound of meat and all other products sold.

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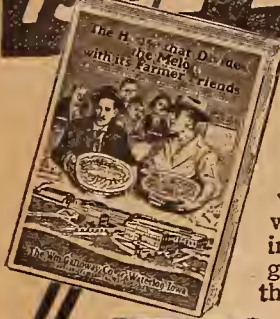


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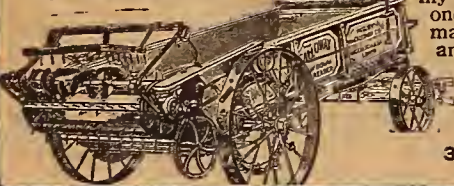
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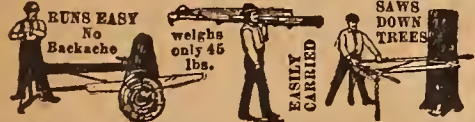


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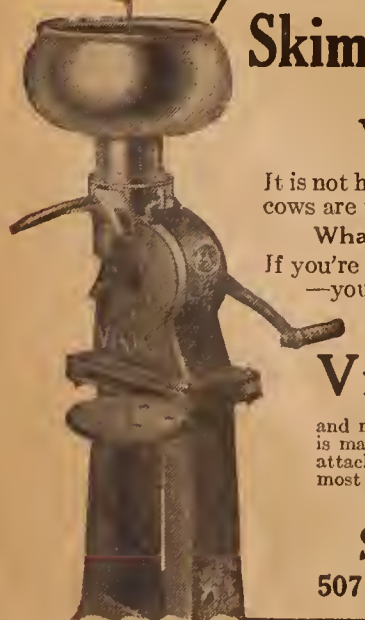
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Why Restrict Oil Imports?

THE first thing I thought of when I read Mr. Holman's interesting article in August FARM AND FIRESIDE about the oil imports was that the cost of living will be raised another notch if Congress puts a protective tariff on fats. We're all consumers—every last one of us—and if we boost the price of fats we've all got to pay the bill. If we buy them at the grocer's, we pay it there. If we buy machinery or anything else produced or sold by labor, we pay it there too. A tax on a necessary foodstuff is paid by the consumer of any kind of goods.

The cost of everything is high enough already. Isn't there another way to protect American farmers—to allow them to control the supply of fats used in American homes?

Take a good look at that picture on page 11, August FARM AND FIRESIDE, do you see how the Oriental is raising his stuff—with wooden plows and little mules? If Americans want vegetable oils because they are cheaper, go out and raise them on American farms, with American machinery, and with American brains. Thousands of miles nearer the market, with tractors, strong horses, and gang-plows, we can put soybean oil on the American market cheaper than Manchurian and Japanese can, and we can use the cake and the vines too. The beans give us a valuable rotation crop. Why feed it all to stock when there is a market for the oil?

Why should dairy farmers worry about the use of vegetable oils? The more oil made in America the more cattle feed. The demand for milk as a beverage is increasing very steadily, as is the demand for ice cream. Oleomargarine will never equal the creaminess of butter, nor will it have the nourishing qualities. Butter will always be in demand, and sell higher than oleomargarine. And cheese—see what a market there is for cheese!

Don't let's worry Congress about this oil business. Our representatives in Washington are too busy as it is. Q. R.

Costs \$256 to Keep Cow

THE average cost of keeping a dairy cow in Ohio in 1918 was \$256, according to Professor Oscar Erf of Ohio State University. The cost of producing milk was \$4.05 per 100 pounds. These figures are published after a careful study of 772 cows that were entered in advanced registry tests, and were from representative herds all over the State.

The cost was apportioned as follows: Feed, \$126; labor, \$61; overhead expense, which included taxes, depreciation, and insurance, \$69. It pays to know your cows well these days of high-priced feed and labor, for a few inefficient cows will spoil the profit of a whole herd.

When You Paint

By Billek Kynn (Ohio)

I WAS driving through the country with my friend Hatton, whose business is buying and selling farms. Real estate is his business; but combined with his commercial instinct is the soul of an artist. I was commenting upon the number of new farm buildings that had been erected, or were in the course of construction as we drove along, when my friend interrupted with:

"Yes, you're right; there has been a wonderful stimulus in building of late due to the general prosperity among the farmers. But there is one thing you'll see lacking in nearly every instance—there's no good taste exhibited in the color scheme of the buildings. Take, for instance, the farm we are passing now: The barn is a bright orange, the garage is painted green, and the house is a dirty brown.

"Now, it is just as easy, and certainly as cheap, to have one general color scheme for all the buildings on each farm. It gives an appearance of unity, and identifies all the buildings as belonging to that particular farm. And this helps wonderfully in the selling of the farm.

"Suppose," he went on, "I'm taking a prospect out to look over a farm: As soon as the property appears in sight he is at once struck by the number and neatness of the buildings. It is the first impression, and it remains with him after we arrive upon the ground. Had the buildings been of various colors, they would not have appealed to him at once as forming one large group; and even after reaching the place, there would be no distinct impression conveyed of a large number of buildings.



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THE A. I. ROOT COMPANY
124 Main Street Medina, Ohio

Hints for the Trapper

By Robert E. Hewes

THE 'possum is not at all a bright animal. He will likely as not blunder into an uncovered trap. But I have found it well to set a trap intended for him very carefully, and thus not only make doubly sure of catching him, but also having a chance of catching any old 'possum with a streak of unusual intelligence in his make-up, and of catching any more intelligent animal that happens along. The 'possum's strongest characteristic is his liking for musty, strong-smelling food. Use this for bait and you will catch him. He usually dens up in hollow trees, logs, and so forth. A No. 1 trap is big enough for him.

He Likes Shiny Things

Though a 'coon is not so wise as a fox or mink, he is no fool by any means. He is wary, but has, I have found, certain peculiarities which, if taken advantage of, will prove his undoing. He likes to walk in narrow places. Last winter I took many a one by setting traps on a ledge a few inches wide that ran along a bluff. Again, he has a bump of curiosity which often boosts him along on the way toward becoming a muff or a boar. He will invariably investigate anything bright. He likes to wander along creeks in search of crawfish and other tit-bits, and a trap set in the water a few inches deep, with a small mirror or a piece of bright tin tied to the pan, and the rest of the trap covered with wet leaves, attracts him with unfailing fascination, and invokes an inquiring poke from his paw. If you use a No. 1½ trap he is your property. A bright moon aids this device greatly. This is my best 'coon recipe, and I hope that everyone who reads this will try it.

Making Prime Furs

However successful you are in trapping, you will not reap a full reward unless you understand the proper care and preparation of the furs for market. If my pelts some time bring higher prices than those of neighbors, it is because I have taken proper care of my furs. Of course, a pelt should be scraped to remove all fat and superfluous flesh, but be careful not to scrape so hard as to cut the fiber of the skin, as this will materially lessen the value. Stretch the skin as soon as it is skinned. But do not stretch it too tight, as this will spread the fur and make it appear thin and scrawny. Hang your pelts to dry in a shady, sheltered place—inside, not out in the weather. If you ship them, do not do so until they are thoroughly dry. Green pelts will grow moldy, causing the fur to drop out. Above all, do not trap too early. The latter part of November is about the right time to start. Unprime pelts have little value. Also, do not trap too late. Spring-caught pelts are almost worthless. The only exception to this rule is the muskrat, which becomes prime in the spring months.

PROFITEERING is taking all you can get, and giving as little as you can. How about some cows and hens?

A Handy Chain

I BELIEVE that a short log chain is one of the handiest things I have around the farm. The regular length has its uses, but this short one is about eight feet long, and has a grab hook and a round hook on it, just the same as any full-length chain.

When I want to drag a small timber this chain gets it in a hurry, and I can hitch close with one horse. This winter I took a team and with this chain "snaked" twelve fair-sized logs out of the woods. It is much handier than a long one for this work.

When I hitch an implement to a wagon, or a wagon to my car, this chain is again right on the job, and there is not ten feet or so to wrap up out of the way. When I drill small grain, I quickly hitch the wagon with the fertilizer or seed behind the seed drill, and take it along as I get over the field. This chain is also handy to lengthen out a regular-sized chain that is a little short for some work, and it saves using two long chains.

I got this piece of chain at a sale for \$1, and I think it cost me 50 cents to have the hooks put on by our blacksmith. I would say that the short chain is in use three times as much as the long one, which indicates which is the handiest.

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THIS announces the offering of the last big block of the Canadian Pacific Reserved Farm Lands. Until this block is disposed of you can secure at low cost a farm home in Western Canada that will make you rich and independent. The country is ideal for mixed farming as well as grain growing. Later, the same lands can be bought only from private owners—and naturally, prices will be higher. Never again on the North American Continent will farm lands be offered at prices so low.

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Extra wide, roomy elbow.



Cupid Astride a Mule

[CONTINUED FROM PAGE 44]

Ben followed him. Susan touched his arm. "How did you get so wet, Mr. Girard?" she asked.

"When he heard that lady's voice," explained Uncle Ben, "thar warn't no holdin' him back. We told him he'd git throwed—an' he did, head over heels in a pool of water. Boys will be boys. I was that way once myself." He strode to the group under the light. "Better come on now, Davy. Better be gittin' back. Old woman's been standin' on her head long enough. Blood's all rushed to her head."

"Davy, are you sure you're strong enough to go?" Agnes asked anxiously.

"This here boy's tough," chuckled Uncle Ben, his hand on Davy's shoulder. "Raised him like a boy ought to be raised."

Agnes borrowed Dr. Fleming's pen. "Here's my address, Davy. Put it in your pocket." She caught him impulsively by both hands. "You must write to me, Davy. Hear?"

"Yes'm, I'll write."

"By the way," Agnes looked up at Uncle Ben, "I loaned my gun to Davy till I call for it."

She followed the boy to the door, and held him again by both hands, and gave them a warm, impetuous little squeeze. Her eyes were brilliant with tears.

"I'll tell all my friends about the bravest boy in the world! I'll never, never forget you, Davy!"

Davy could say nothing. He was trying

hard to swallow the biggest lump that had arisen in his throat since Buck, his hound dog, died.

Girard went out with Uncle Ben and the boy. He put his hands on Davy's shoulders.

"You're a trump, old man!" he said.

In the big hall of the club house that night there was much merry-making before the fire. Men and women crowded about Agnes as she sat on the couch by the fire, her aunt Julia on one side, Dr. Fleming on the other. Face flushed, eyes brilliant, she told of her adventures. She

had got tired of waiting at the lodge in the woods. She had grown a bit frightened, it was so lonely, and had decided to come home by herself. The man had met her at the fork of the road and directed her. She had kept on going, hoping that the road would turn into a bigger one. Instead it had run out in the swamp. She had turned back, the man had stopped her—then had come Davy.

Not once did she glance at Girard. It was Fleming who received Aunt Julia's thanks.

At midnight, close to his fire in his room, Girard tried to instill some warmth in his bones. He had played a poor part in her eyes this day. He had left her on the porch of the lodge; he had been the last to reach her. She did not know that it was he who had taken charge of the party from the store; that it was he who had figured out the way she must have gone; that in his eagerness to reach her he had pushed his horse ahead, and that the horse had fallen in a hole.

Of course none of it mattered. The thing was that the girl was safe, but he couldn't help thinking that Fleming had not fumbled his cards—not once. He was not the man to be ungenerous to a rival, but he had been disappointed in Fleming at the store. The man hadn't shown up well, pacing the floor, helpless. He had known Fleming at college and later—self-centered, calculating, small-calibered.

But Fleming had succeeded. Starting out with considerable means, he had set up office in the wealthy section of the city. His practice was of the exclusive kind that paid. Then he had built the private sanitarium, a place of heavy-carpeted reception-rooms and efficient silently moving nurses. The place had cost a mint of money, and Agnes was rich.

Girard was a straight-thinking man. He knew how much love Fleming was capable of, how much selfish calculation entered into all his emotions. He knew, too, that

it might be a long time before he himself succeeded at the writing game. He had met with some success—but how little compared with the standard Agnes was accustomed to! He respected his work—it was solid; yet, it might be years.

It was two o'clock when he tumbled into bed. He wondered if Agnes were disappointed in him—or if she cared enough to be that. Well, he would explain some things to-morrow. Then it would be all right. It was eleven o'clock when he rose, stiff and aching. Godfrey, who spent most of the winter at the club, was standing by the fire when he came down-stairs. "You look used up, Girard," he said.

"Has Agnes come down?" he asked, his heart suddenly pounding.

"Come down! Come down and gone. She and her aunt Julia, and Fleming, caught the ten o'clock train for New York."

IT WAS a week later when Philip Girard came out of the front door of the big old house where he had his rooms and stood for a minute on the stoop pulling on his gloves, his cane hung in the crook of his arm. A snowstorm was raging violently. From the street to his left whirled eddies of white flakes, as if a giant track sweeper were concealed around the corner. The roofs of the park buildings were heavy with their burden; the trees had white pillows in their crotches. The tall buildings to the right climbed mistily into the gray sky.

The sounds of the city were mysteriously muffled.

Across the square dimly loomed the Washington Arch. Underneath it came a bus, with a solitary hardy soul perched on top. Girard crossed the street, the snow up to his ankles. He thought of the time, not so distant in the past, when such a morning made him feel like shouting with exuberance of spirits. "Must be getting old," he smiled.

As a matter of fact, his self-confidence was at a low ebb this morning. He had returned from the South the day before. Now he

was going to see Agnes Waring. Her manner that last night in the club had warned him what he might expect. He had not given her advance notice that he was coming. A telephone is the most impersonal of devices; and, like other young men, he counted no little on the persuasiveness of his presence.

He climbed into the bus, and sat with cane between his legs, looking out at the storm, the crowds slanting past, the laboring teams, the red-faced "white wings," their uniforms yellow against the snow. Like a vigorous, full-blooded man, only temporarily benumbed, the city had begun to shake off its lethargy.

He had plenty of time to think, to dread the approaching interview. He had rehearsed what he was going to say, provided she gave him the opportunity of saying anything at all. It was very easy for a young woman to have a headache. Like a sultan, she is surrounded by guards, and a headache is chief among them. Only the favored may gain admission. When they left New York he was one of the favored. Now what would his reception be?

At Fifty-seventh Street he got out, crossed over to Park Avenue, climbed the brown-stone steps of a mansion, and pushed the bell. A maid answered. Yes, Miss Waring was in.

She took his hat and coat and cane, and he went into the drawing-room. It was a handsome room with lofty ceiling and elaborate chandelier, and reposeful, aloof manner. Probably in all the generations of high-bred women who had lived here, Agnes Waring was the first to be forgotten by an escort.

The fire in the grate looked friendly as of old, and he crossed over to it. The house was very silent. He started when Mrs. Waring, stately, handsome, judicial, came in from the rear parlor to greet him. Her manner was non-committal as only a woman's manner can be. If she knew of the adventure down South, she gave no



This is Mr. and Mrs. Derieux and the "third member of the family"

sign of her knowledge. She only expressed the hope that he was well, and the opinion that it was a very bad morning. Then she left him alone.

Girard sat down, his pulse mounting higher and higher. It was impossible, he tried to reason, that a single careless act should seriously disturb the course of his life and hers. Yet this act had occurred in the very beginning of what he had hoped was Agnes' growing regard for him. A very small obstruction at the source may divert the current of a mighty river.

He got up and paced the floor. He drew near the heavy-curtained doorway. From the regions above into which the maid had disappeared came no sign or sound. Time was when he would have passed the minutes by playing on the piano. This morning it would be presumptuous.

HE WAS facing the friendly fire when a slight sound made him turn quickly. Agnes herself had entered the room. She was in a short black silk morning dress with wide white collar and cuffs. She wore a single white rose in her girdle. There was a suggestion of the Puritan maid in the quaintness of her costume, and in the pretty severity of her face.

Gratefully he crossed the floor and met her halfway. He took her hand, which was a little passive this morning, and looked down into her eyes. It was wonderful how his confidence returned at sight of her. She was going to give him a chance; and a chance was all he asked.

"Well, Agnes, I've come to plead forgiveness."

"Forgiveness?"

"Yes—if you knew what I've been through—" He shook his head ruefully. "Won't you sit down?"

Girard pulled a big wing chair near the fire for her. She sat down, her slippers crossed on the oriental rug. Against the crimson upholstery she looked like a judge prepared to decide the case of the man who took his seat in a low chair in front of her. "I suppose it's impossible," he began, "for a woman to realize the fascination a hunt has for a man."

"Yes—it's impossible."

"What can I do?" demanded Girard. "Throw myself on my knees? Will that do any good?"

She smiled faintly. "Not a bit."

"I'm glad of it. The position would be awkward. Anyway, Agnes, you are having your revenge, and you know it as well as I. You are seeing to it that I do penance for my sin—aren't you?"

Agnes smiled coldly. "Did you see Davy before you left?"

"Yes—I rode over one morning; found Uncle Ben smoking his pipe by the fire, Aunt Sally cooking dinner, Davy chopping wood. Beautiful family arrangement—typical, I should say—at Uncle Ben's."

"How was Davy looking?"

"Same boy, minus a tooth."

"I'm sorry about the tooth. I wrote Mr. Staples to take him to a dentist and have one put in. I enclosed fifty dollars. What are you laughing at?"

"Agnes, your confidence in mankind is uncanny—and delightful!"

She did not look at him. She rested her chin on her hand. Her eyes grew soft. "Isn't Davy a dear?" she mused.

"A trump, that boy. But, Agnes, remember—he left you, even as I."

"He was the first to reach me!" she retorted. "And you were the last!"

He rose, leaned against the mantel, and looked down at her with smiling face. She raised her eyes to his.

"It's a fact," she said. "You were the last!"

Girard did not reply. Things were going beautifully.

"Not that I cared," she continued, flushing, "except it seemed to me that since you were responsible you might have shown some interest."

"So you thought I was a laggard?"

"I haven't thought about it at all!"

"Well, well, well," said Girard. "Agnes, don't you know how it happened?"

"No. It doesn't matter. How?"

"My horse threw me."

"Did you give me a chance? Besides, Agnes, can you imagine anything more undignified! Here comes Sir Philip charging, a frown on his brow, his lance fixed! His horse stumbles, he sails through the air, he splashes on his all fours in a mud hole! From charging steed to mud hole, from sublime to ridiculous, what a romantic picture!"

She rose and faced him with laughing eyes and outstretched hand. This time she gave him a cordial little grip.

"Am I forgiven?"

"Yes, Philip—and now what about your book?"

"I'm to see Mr. Dodge this morning."

"I know it will be a success."

"I'm counting on it. Agnes, do you know how much depends on that book?"

For a moment she looked up at him as she had looked in the field of straw that day she could not shoot. Again, as on that day, her eyes fell before his gaze, her cheeks flushed, and she turned quickly away. She crossed the floor, and took her seat at the piano.

"What shall it be, Philip?" She smiled over her shoulder.

"Oh, a little McDowell—'In the Autumn,' say. I think it will bring some things back."

He stood before the fire, his hands in his pockets, while she played. There is no attitude that gives a man such a sense of ownership as to stand with his back to the fire, his hands in his pockets. He looked at the slender figure, the white neck, the beautifully poised brown head. He listened to the melody, now enchantingly light, now solemn, with a half-religious sense as of dark deep woods with the sunlight glancing through. His eyes were tender. Agnes stood again on the porch of Sunset Lodge, and looked over the gold-flooded bottoms!

She left the piano and came back to him. "May I see you this evening?" he asked.

"I am going out with Dr. Fleming to see his new hospital."

"To-morrow evening?"

"I am sorry—"

"To-morrow afternoon? Suppose we go to a matinee. What is there you haven't seen? David Garrick? Well, we'll go there. We'll have dinner afterward."

"Philip," she said, "you must call me up and let me know who wins about your book. Good-by, Philip."

Girard came down the steps smiling. He walked four squares past the subway station before he realized where he was. Then he caught a train down-town. As he passed down the hall of the building in which were his publisher's offices, he saluted the man behind the cigar counter. He was ready to salute everybody this morning. To a young man in Girard's state of mind the whole world is a friend.

Confidently he passed the girl at the desk and went into Mr. Dodge's inner office.

"Sit down, Girard," said the publisher. He reached in the drawer of his desk and drew out a bulky manuscript. He turned the pages slowly, a frown on his face.

"I've given this a great deal of thought," he said, his eyes on the pages as he turned them. "I don't understand it. The first goes right along—entirely satisfactorily. The last falls down completely."

Girard nodded. Why hadn't he seen it?

"I'm afraid," continued the publisher, "I'll have to return it to you for revision. What was the matter with you, Girard?"

"I don't know, Mr. Dodge."

"Aren't you off in weight?"

"I believe I am."

"Seen your doctor lately?"

Girard shook his head.

"Know Fleming? The best in the business."

"He's my physician when I have one."

"See him!"

GIRARD came down, the manuscript under his arm. Day after day, night after night, he had worked on this story. He was seized with a savage revulsion of feeling; he was tempted to throw the thing in a garbage can. He passed his friend at the tobacco stand without notice. In the door of the building he stood watching the people pass, each intent on his own affairs. The wind pierced him through.

He went into a cigar store. Some idea of calling her up as she had asked him to do entered his mind, only to be brushed



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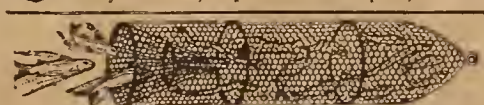
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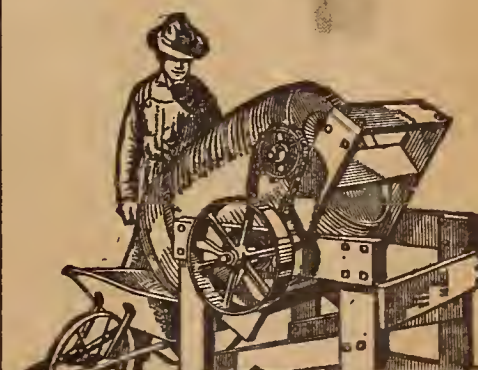
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aside. What could he tell her? He was humiliated, angry with himself, discouraged. The advice of the publisher that he see his physician recurred to him. He must do something. He called at the doctor's office.

A trim, impersonal nurse met him and conducted him briskly down a hallway, her uniform cracking starchily. In the reception-room sat two fashionably dressed women. There was a faint antiseptic odor in the apartment. Girard sank into a chair and waited. The women were called, each in her turn.

Girard looked about the room, every appointment of which was precise and in perfect taste. The paintings Fleming had purchased abroad. The soft lights, necessary on so dark a day, glistened on satiny mahogany wainscoting. Girard thought of his own quarters, his meager breakfasts, his lunches snatched here and there, his informal dinners, his generally loose-jointed life. He looked at the rejected manuscript in his lap. He and Fleming loved the same girl.

"I'm a better man than he is for all that," said Philip Girard very quietly in his soul—and believed it.

His mind was recovering from its gloom; new plans began to form. He smiled a little ironically as he thought of his late depression. This wasn't the first time he had had the props knocked out from under him. As for this examination—well, a tonic, a little professional advice, and he would come away, and get to work once more on his manuscript with Agnes always in his mind.

"Well, Girard!" Fleming stood in the doorway. "Dreaming?"

Girard rose, put his manuscript on the table, and followed Fleming into a white-enameled office like an operating-room. Fleming sat down at his desk and motioned Girard to a chair.

"Well, what can I do for you?"

"I've been a little off for several months, Fleming—unable to work with any punch. Remember that plunge I took over my horse's head down South? I've had a cold ever since then."

Fleming nodded. There was nothing reminiscent or personal about Fleming.

"This way," he said, and led him to a glass-top table behind a screen. The nurse came in with her blanks.

The thing was beginning to look serious. Fleming's face gave no sign as he bent over his patient, calling out in unintelligible terms to the nurse.

The examination was over at last. The nurse went out with her records. Fleming took his seat once more at his desk and lighted a cigarette.

"Well," he blew a puff into the air, "you'll have to stop work."

Girard started.

"I can't afford to!"

"You'll have to. Leave the city. Live in the open."

Girard stared at him. Fleming reached in his desk and pulled out several folders which he marked and then handed to Girard.

"Some resorts," he explained. "I've marked those I can recommend personally. I'll make out a diet list and some general rules which I shall send to you this afternoon."

Girard got to his feet, took a deep breath, and looked down at him.

"What's the matter with me, Fleming? T. B.?"

Fleming's face flushed, and he quickly adjusted his glasses.

"Looks like it. Get out of town, live in the open, take care of yourself, and the sooner you get away the better."

GIRARD came out dazed. There had been, in the matter-of-factness of the examination, in the terseness of the verdict, something remorseless, suggestive of fate. He hungered as he had never hungered before for sympathy.

He turned as if by instinct down Park Avenue. Then he stopped. What was this he was about to do? Make a sentimental appeal to the girl he loved?

"No," he said aloud. "No."

He caught the subway down-town and stumbled up-stairs to his room. All the afternoon he sat by the fire. A messenger brought detailed instructions from Fleming. He studied them carefully. He would make this fight for health. He would begin all over—and Agnes? He buried his face in his hands.

Next afternoon Girard slowly climbed the familiar steps on Park Avenue. In the parlor he stood close to the fire. At Agnes' entrance he turned quickly.

"Oh, Philip, why didn't you call me up yesterday? What about your book?"

"There was nothing definite to say. Some minor changes will have to be made," Girard smiled. "There'll be some delay."

At the matinee she applauded the grandiose passages of David Garrick. Between the acts she chatted happily. Girard agreed with all she said, although he hardly knew what it was. He only knew that her voice was music in his ears. His own thoughts claimed him. From this sentimental old comedy that he had chosen at random he was getting his own cue—if strength were given him to carry the thing through.

It was dusk when they came out. Down the lighted street the winter sunset glowed faintly. The crowd about them was full of life and color. She put her hand on his arm and looked up into his face.

"Where do you get your dinners, Philip?" she asked.

"At a little place down-town—a Bohemian joint so-called."

"Can't we go there to-night?"

"I guess so—if you want to, Agnes."

A WAITER nodded to Girard when they entered the restaurant, and led them to a garden in the rear. With flushed face and brilliant eyes, Agnes looked about at the tables already filling, at the hurrying waiters, at the diners with bottles of wine between them.

"Oh, Philip!" Agnes clasped her hands on the table, "I think this is charming—what's the matter? Didn't you enjoy the play?"

Girard studied her eager face. Did she care for him? The heart of a generous woman has always responded to the struggling artist. Could he take advantage of this idealism in her nature, this revolt against the commonplace, this innate unworldliness? Could he involve her in his own misfortune? No. He would follow the course suggested by the play, where the hero, David Garrick, tries to shatter the ideal a girl has formed of him, in order not to involve her in his own misfortunes. Perhaps he could shatter the ideal Agnes might have formed of him before.

His eyes narrowed.

"Same old thing, wasn't it? Rich father, outcast suitor, dénouement—then love in a cottage!"

"Why are you so worldly-wise, Philip? It's not like you!"

"Sothen's acting was not bad," continued Girard, "but the play was stilted; Garrick's renunciation was absurd."

"It was not absurd!" she declared. "I believe there are men to-day who would do the same thing. The only objection I have is this—it's not fair to the girl."

"Fair to the girl? That's exactly what it is. So far, Garrick was right—amazingly verbose—but right. The only trouble was he didn't stick to his resolution. As for the love-in-a-cottage theme—pitifully threadbare!"

"Why, Philip, I don't understand you! It's the theme of your best-known story."

"I know it, Agnes. Don't rub it in. Perhaps you noticed that I take the blissful couple to the threshold of the vine-clad cottage and leave them—with the grocer's bills to pay." Girard shook his head. "It all sounds very pretty. But it won't work."

Agnes' perplexed eyes studied his face. The waiter removed one course and brought another.

"Tell me this, Philip," she demanded, "why did you write that story?"

He shrugged his shoulders. "To sell. There's only one thing left out—the truth."

Her face flushed.

"What is that higher truth you talk so eloquently about—the ideal truth?"

"There's no such critter. Truth is concrete, it must be based on facts. The facts are that grocers' bills must be met, or grocers will starve. And grocers persist in having wives and children. Whoever heard of an unmarried grocer?"

"Philip—what is the matter with you to-night?"

"Just honest—that's all."

"You are not honest, Philip!" She clasped her hands on the table and leaned toward him. "You are not honest with yourself. Why did you say those things if you didn't believe them?"

"To ease my conscience."

Agnes rose.

"Oh, you have spoiled my evening. I'm disappointed in you, Philip Girard. Success has made you a cynic!"

Girard held her coat for her.

"Perhaps that's it." He smiled grimly. "Few men could stand my overwhelming success."

In the hall she stood with averted face, tapping the floor with her foot, while

Girard got his hat and coat. Silently they sat side by side on the ride home. In the hall she coldly extended her hand. Girard held it for a moment. Perhaps this was the last time he would tell her good-by in that hall.

"Agnes," he began, and stopped; then with a steady look into her eyes, "Good night, Agnes."

The door closed behind him, and he came down the steps. With bowed head he walked to the station. He had carried it through. But it had been harder even than he thought it could be.

ALL next day Agnes expected Philip Girard, the same old Philip, to come and explain his conduct of the night before. A writer, she told herself, must enter into the moods of all sorts of people. What did it matter if he had been a cynic for an hour? He had spoiled her evening, and she would make him pay for that. But she would forgive him in the end.

At six o'clock Dr. Fleming called to take her to dinner.

"Where shall we go?" he asked her as he helped her into his car and took his seat beside her.

"I am tired of the up-town restaurants," she said impulsively. "I know a charming little place down-town on Eighth Street. Let's go there, Dr. Fleming."

"Well, of course, Agnes, if you want to." He gave the directions to the chauffeur.

In the low-ceiled basement hallway he frowningly allowed the check man to take his hat and coat.

"Tell the waiter to take us back in the garden," directed Agnes.

They were shown to a table near where she had sat with Girard the night before.

"Are you looking for someone, Agnes?" demanded Fleming.

"No—no." She took a seat opposite him.

Fleming stared all around.

"When did you learn of this place?"

"I've been here before. Many well-known artists come here."

"A doubtful recommendation. The place seems to make you pensive, Agnes. What are you thinking about?"

She flushed quickly.

"About—about Davy!" she declared.

"Davy Allen. I want to do something for him."

"You can't do anything for that sort, Agnes. They're a degenerate race—poor white trash they are called in their own country."

"I know something can be done for Davy!" retorted Agnes.

Fleming was quick to see that he had made a mistake.

"Well, perhaps so. What is your plan? Send him to school? I recall now that his English was a little off color."

"It was adorable! 'Hands up thar, Jake Raines!' And then he swore. That was one thing made it so adorable—his swearing was so dreadful! And he was so ragged and bruised and trembling—and so brave! That was an adventure, wasn't it? I thought help would never, never come. Philip tells me his horse threw him in a bog. Have you seen him since he got back?"

"Yes—I've seen him. I think he's left the city again."

Agnes set down the glass of water that had been halfway to her lips.

"Left!"

"Yes—I advised him to stop work for a while."

"Why? Tell me, Dr. Fleming—is Philip ill?"

"I would hardly say that. He's been working pretty hard."

"Where has he gone?"

"I don't know—he didn't say. Agnes, aren't you going to eat your dessert? It's not bad for such a place."

They came out of the restaurant in silence. The car started up Eighth Street. Agnes leaned suddenly forward, with a sharp intake of breath.

"What's the matter?" demanded Fleming.

"It was Philip—crossing the street!"

"Hardly," said Fleming. "I understood he was to leave at once."

Agnes recovered herself quickly and leaned back in the seat.

"I must have been mistaken. It was only a glimpse."

That night after Fleming had left she went straight to her room and dismissed the maid. She sank into a chair exhausted. Had Philip left the city without a word for her? She sat there for a long time, then went to bed and cried a little into her pillow. He must have worked too hard. Was he ill? Dr. Fleming had been noncommittal. If she only knew why he had gone!

But perhaps he had not gone after all. The impression grew that it was Philip she had seen on Eighth Street. The lights there were dim; but it looked so much like Philip—it was Philip's walk. Yes, he was still in the city. She knew it. He would come in the morning. He would make everything all right. Agnes fell asleep, a smile on her lips.

Girard came into his room from dinner, and threw his overcoat and hat on the lounge. Then he leaned against the mantel and gazed into the coals of the grate, a perplexed frown on his face. As he had crossed the street to his restaurant a small limousine had left the curb. He had thought he recognized a face behind the glass.

He must surely have been mistaken. Now that he had lost her, everywhere he looked he saw her face. He drew up a chair, pulled out the folders Fleming had

given him, and compared their rates with the meager balance in his bank book. He shook his head, and put them aside.

Without the wind howled dimly. An old gilt mirror tilted above the mantel showed him his face, long, thin, pale. He must get away from here. Like a man stricken in the heat of battle, he had not until his attention was called to it noticed the wound.

For a long time he sat motionless staring at the reflection of the chandelier in the mirror. The fire burned low, the room grew cold. He rose, punched the fire, and straightened up. He stretched his arms with a deep sigh.

"It's not the first time a man's been knocked down," he said.

His eyes wandered about the room that he had furnished piece by piece as things prospered with him. The curtains, the books, the pictures, the lounge, each told the story of work accepted. In that spacious old closet were his hunting clothes, his gun, his golf sticks. In a corner sat his typewriter, covered up. How long before he could take that cover off? The house had grown quiet, the room inexpressibly lonely. He needed help, he wanted sympathy.

HE NOTICED a letter near the door. It had been pushed under while he sat brooding. He crossed the floor, picked up the letter, and returned to the fire.

The envelope was addressed painfully with a pencil. There were black erasures, emendations and afterthoughts.

Girard tore open the envelope.

MR. GERARD, DEAR FREN: i ben thinkin of ritin you ever since you lef, but could not think of nuthing to say but all is Well. It's goin to be a early spring uncle ben says. i ben workin here to Gant's sto since yistiddy, i get 25 cent every day but sunday. You reckoleck the big tree in front of sunset loge, i nocked a fox Squirl out first shot. Tell Miss Agnes i Oil the Gun ever day and uncle ben ain't never found out it ain't hern and ain't likely to nuther. I wish you and her could come down, the loge ain't got nobody in it but Rats. Susan she give me too ours to rite this in, and now they are Upp. Your truly fren, DAVY ALLEN.

p. s. susan says give kine regards to Mr. Gerard, and give me fifteen mo minits to rite it in, they are Upp too. DAVY ALLEN.

Girard folded up the letter. "Well," he said, "Providence hasn't deserted me after all. Davy's still on deck!"

[CONCLUDED IN THE FEBRUARY NUMBER]



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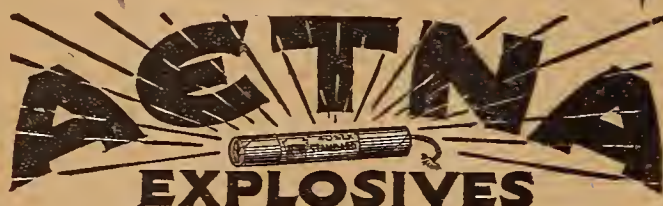
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Mary and Martha again



In November we showed Mary and Martha Cooper, twin sisters of Cadiz, Ohio, as farmerettes. Here they seem to be more interested in getting ready to scare the life out of someone with pumpkin faces. We have learned which is Mary and which is Martha, but we won't tell. You'll have to guess for yourself. A. S. W.

How to Keep Good Help

By R. B. Rushing (Illinois)

OFTEN the hired man seems to have a hatred toward the dairy business. The question comes at once: "Why is this true? Is milking harder than other work?" I think that most hired men will agree that milking is not such hard work, but often the farmer figures on having the hand to do a day's work in the fields and then do the milking in the morning and evening besides, without any extra pay. Certainly, if the dairy business is worth while the farmer should be willing to pay for the extra labor involved.

I worked for several years as a hired man on the farm, and found that from the standpoint of the hired hand the work of milking the cows is not harder than the other work, but that the tendency of the farmer is too often to do the milking after a hard day's work has been done in the field. Often the milking was begun at five or earlier in the morning, and in the evening when the milking was done, the milk separated, and the calves fed it was from eight to nine o'clock.

The demands of the hired man of to-day are not so much for higher wages as they are for shorter days. This is all right, and if the farmer can cut a few hours off the day's work in the field and use them in the dairy business, he will make just as much money and enjoy life a great deal better. The hired man will not object to this system of working.

Cows in order to do their best should be milked at regular intervals. If they are milked at five in the morning, they should be milked at five in the evening. If this

plan is followed I am sure that the hired-man question will not be so difficult to handle on the farm where there are a goodly number of cows to take care of.

A hired man should be paid according to his ability and willingness to work. If he is a sluggard and still receives the same wages as the alert man, the man with the higher ambition is soon discouraged because he does not receive pay in proportion to the amount of work that he does.

In many cases the farmer is condemning the hired man when the farmer himself is doing about all he can to discourage the man's ability.

Human interest and kindness are perhaps the best means of getting the most out of the hired man. If he is greeted in a cheerful way in the morning when he meets his boss at the barn, and is treated as a man, a real human being, he feels that there is something in this old world besides hard work, and will feel more like trying to please his employer.

On the other hand, if the man is greeted in a grouchy way in the early morning, or receives no greeting at all, he feels that the man for whom he is working is interested in him only so far as he wishes to get work out of him.

If some of the foregoing hints are carried out, the dairy business will not be dreaded to so great an extent by the hired man, and in the long run the farmer will be money ahead. The dairy business is certainly worth while. Why should not the farmer do his best to develop it on his farm?

Tobacco's a Good Crop

[CONTINUED FROM PAGE 21]

has raised a dandy crop, and then hurt it a whole lot by poor handling when it was curing in the barn.

"In the winter, when the tobacco is cured, we spend days stripping the leaves off the stalks. Then's when a fellow's eye must be keen, because he has to grade the leaves and tie them into bands. A well-graded lot of tobacco brings a good price, while a poorly graded crop don't sell well at all.

"You ought to be present at some of the loose-leaf markets in the winter to see things real lively. Sometimes there are a hundred wagons waiting their turns to unload their tobacco on the loose-leaf floors to be sold by the auctioneers to the highest bidders.

"I've told you all of this to kind of show you that growing a crop of fine burley tobacco that's got good color and the right kind of body isn't learned in a year or two. And that's why I said just now that I don't believe a lot of other States are going to rush into the business just because prices are high. And then, too, I've heard the buyers for the big tobacco companies say that burley grown on the limestone soils of Kentucky is different from tobacco grown in other States. Of course, dark tobacco is grown in other parts of Kentucky, and cigar leaf is grown in a lot of States; but I'm just talking about burley because I was born and brought up in a patch of Burley tobacco.

"The whole thing in a nutshell is that it's a paying crop; but, like most everything that brings big money, it's got to be done just right from beginning to end. I might say about the growing of fine tobacco that it's like the dairy business or the growing of fine fruit—you've got to have the know-how right down into your finger tips."

Ways to Keep Your Dog Well

[CONTINUED FROM PAGE 18]

Another and most serious fault in all dogs is the propensity to fight. No more senseless thing to do can be imagined than to encourage the fighting dog to attack other dogs. Head off this tendency in puppyhood, and keep your dog out of fights—if you wish future peace of mind. Chasing chickens is another bad habit not to be tolerated about a farm. In the fall the chickens should run free about the premises, and Mr. Dog is to let them severely alone. One two-day session with a dead chicken hung about his neck will cure the most ardent.

But most well-raised farm dogs are well-mannered enough to be allowed the freedom of the place and join us blithely in all our doings. If well-behaved—and it is you that must make him so—he will be a continuous delight, and a welcome and useful addition to the farm family.

To Get Rid of Chicken Lice

By V. G. Aubry

ALL THE spraying of the chicken houses which you want to do will not get rid of this insect, as it is found on the bird, while you are spraying the house. This louse you can very easily get rid of if you will use sodium fluoride, commercial grade. If the druggist does not handle this in your town, I feel sure he will get it for you. This is a white powder, and if you will put three or four pinches of this on each bird, some around the vent, the base of the tail, under each wing, down the back and around the back of the head, you will find this will absolutely get rid of your chicken lice. You must do this, however, on every bird, without skipping one.



Too young to say Pillsbury's—
but look at his mouth!

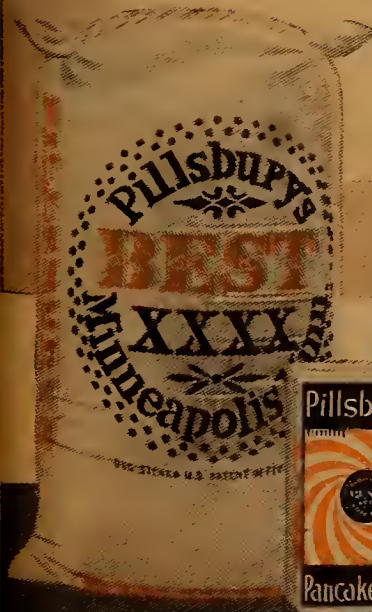
The delicate deliciousness of Pillsbury's Wheat Cereal tempts grown-ups as well as children, and it is as nourishing as it is delicious.

Wheat cereal is a most popular food everywhere. Pillsbury's is the very finest grade of wheat cereal made. Its constant superior quality is assured, because it is a product of the same great mills which make Pillsbury's Best Flour.

Made from the white hearts of selected wheat, Pillsbury's Wheat Cereal contains vitally essential food elements and is *very easily digested*. It is the best form of concentrated nourishment for infants, and at the same time, a substantial food capable of sustaining the hardest worker.

Always buy Pillsbury's Family of Foods—Pillsbury's Wheat Cereal—Health Bran—Pancake Flour—Pillsbury's Best Flour—Rye, Graham and Durum flours. They are all guaranteed. Your grocer carries Pillsbury's Products.

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MINNEAPOLIS, U. S. A.



Pillsbury's
FAMILY OF FOODS

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You
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With or without
metal cover—four
sizes. Quick ship-
ment from Clay
Center, Neb.; St.
Joseph, Mo.; or
Ottumwa, Ia. We
pay freight.

Flood Your Farm With Well-Hatched Poultry

Do you know that the profits on 4 or 5 good hens could equal the value of a load of hay? Think of what a few dozen or a few hundred could give you! Remember it doesn't take an extra acre of land on your farm to yield a profitable return on a big flock of chickens. Turn more poultry into profits this year with

Old Trusty Incubators and Brooders

\$50,000 customers say you can't beat Old Trusty for big hatches in any weather and years of service. Handy, reliable, and sells at a low price because it's made in the world's largest exclusive incubator and brooder factory.

Send for My ABC of Poultry Profits

—a 72-page book, size 9x12 inches. About one-fifth catalog and four-fifths a helpful book for any one wanting to make money with poultry. Let me send you a copy free.

Yours truly,
H. H. JOHNSON, "The Incubator Man."

M. M. Johnson Co.
Clay Center, Neb.



SOFT-HEAT-NATURE'S WAY

Bigger Hatches—Stronger Chicks
Moist warmth, new principle in incubation, hatches every good egg. No suffocation in shell, no cripples hatched by the
Porter SOFT-HEAT Incubator
Egg chamber round like hen nest. Every egg heated evenly in all temperatures. Heat, moisture, ventilation automatically adjusted. Eggs turned in two minutes without removing or lifting tray. Center Heat. More fresh, moist air insures success. Children get same good results as experts.

Reduces Cost 300 Per Cent
One filling, 3 to 4 quarts of oil, completes hatch. Enormous fuel saving. Result of 25 years' successful incubator building. Iron-Clad Guarantee. We Ship by Prepaid Express. Send postal for illustrated book on Soft-Heat Incubation.
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THE LOWEST Priced Incubator Per Chick Hatched



This is proved by the "Successful" 27 year record. You want the "Successful" for a sure success this year.

Sell more eggs and chickens—help feed the world.
"SUCCESSFUL" INCUBATOR or BROODER
Write me a postal for book and prices. "Proper Care and Feeding of Chicks, Ducks and Turkeys" sent for 10 cents. "Successful" Grain Sprouters furnish green food—make hens lay in winter. Ask about my high-grade poultry—all leading varieties.
J. S. Gilcrest, Pres.
DES MOINES INCUBATOR CO.
61 Second St., Des Moines, Ia.



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A high grade hatcher direct from factory to user at bed-rock price, made by experts of 26 years experience. Has redwood case, triple walls, copper hot water tank, self regulator, nursery, large oil tank—one filling to hatch, safety lamp. All latest improvements. Safe, simple, durable and a sure hatcher. All set up ready for use. Fully guaranteed. Largest factory in northwest. Write for free book and catalog.
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Poultry Book Latest and best yet! 144 pages, 215 beautiful pictures, hatching, rearing, feeding and disease information. Describes busy Poultry Farm handling 53 pure-bred varieties and BABY CHICKS. Tells how to choose fowls eggs, incubators sprouters. Mailed for 10 cents.
Berry's Poultry Farm, Box 39 Clarinda, Iowa

POULTRY AND PIGEONS FOR PROFIT
Foy's big book tells all about it. Contains many colored plates—an encyclopedia of poultry information, poultry houses, feeding for eggs, etc. Written by a man who knows. Sent for 5 cents. Low prices, fowls and eggs.
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I'll Start You with leading varieties of Pure Bred Poultry, Incubators, Grain Sprouters, Supplies, Eggs, Baby Chicks. Highest quality. Lowest possible cost. Send for illustrated book and price list. A regular information bureau free. Address
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Money in Poultry Small Investment. Big profits. Our stock pays best. Thousands of prizes at big shows, best layers, lowest prices, all varieties. Big Free Book tells all about it. Write today.
CRESCENT POULTRY FARM, Box 31, Des Moines, Ia.

64 BREEDS Most Profitable Chickens, ducks, geese and turkeys. Choice, pure-bred, hardy northern raised. Fowls, eggs, incubators at low prices. America's greatest poultry farm. 27 years in business. Valuable new 108 page Poultry Guide and Catalog free. Write today.
R. F. NEUBERT Co., Box 824, Mankato, Minn.

Handling Poultry Manure

By C. M. Baker (Ohio)

BECAUSE of its high nitrogen content, poultry manure is quite valuable as a fertilizer, and we find that we can make a high-grade fertilizer cheaply by conserving it carefully. When practicable, we take the manure from the poultry house and store it in a tight container just outside the building before it is mixed into a fertilizer. Or, when the poultry houses are cleaned out, the litter is placed in the manure spreader, to which is added about 300 pounds of acid phosphate to a load of the manure. This combination, we think, makes a mixture equal to a high-grade fertilizer, and we use it to sprinkle lightly over meadows or crops requiring heavy fertilization of valuable food elements.

We find that in growing rape for swine forage, if we sprinkle manure at the rate of about four tons to the acre over the soil after the seed is sown, it gives the rape a quick start, and makes it produce a very luxuriant forage. The fertilizer, in all events, contains a high amount of available food for plants, and should only be used chiefly on crops that will support and require heavy fertilization. The effects of the treatment is seen for several years afterward on the succeeding crops.

Open Poultry House Best

By Francis M. Goble (Ohio)

I DON'T suppose that you will object to honest criticism of an article by P. F. Goe, Washington, in the July issue, "Health and the Poultry House?" Experience has taught me fully to agree with his ideas of how a poultry house should be constructed, with one exception. He advocates the use of practically the whole southern front for windows, which, from my experience, is all wrong. He describes just such a house as I built twenty years ago, but one winter convinced me that it was all wrong.

With such a house, if you will test it on a bright sunny day, and again in the night or morning, you will find a difference of from 25 to 30 degrees in the temperature. Besides, your house will be damp, and the difference in the temperature will be sufficient to give the flock bad colds, which is the start of roup. Now, could we reverse this order and have them warmer at night than during the daytime, when the flock will be able to keep themselves comfortable by exercising—make them scratch for their food? No; I use a southern exposure but no glass opened front, rather a curtain front, with curtain raised as soon as sun is up, admitting both light and sunshine, with not nearly so great a change between day and night. This has been my experience, and, believe me, I have paid the price in broken combs, and roup chickens, but after removing the windows no such trouble has ever occurred.

CHICKENS are just like the rest of us. If they don't have to work, they won't. Instead of throwing their grain on a bare floor, scatter it through light clean litter and let them get some exercise by scratching for it.

Ten Good Rules to Follow

[CONTINUED FROM PAGE 7]

increased income from the investment will provide for the loan, without putting a strain on the other resources of the farmer. "A mortgage on your farm to obtain cash with which to do a larger business is not a disgrace. It is a sign of business enterprise, provided it is done intelligently. There are very few instances, if any, where farmers have been able to expand without using borrowed capital, exactly as merchants and manufacturers are constantly doing.

"In the business world the largest concerns operate on money furnished by the bank for at least part of the year, and they are obliged to give security for the loan. But the fact that they use borrowed capital is not for a moment set down against them. It is very creditable in big business to be able to float a large loan. The late J. Pierpont Morgan once defined a millionaire as 'a man who is able to borrow a million dollars.' A farmer therefore who wishes to expand his business should make a study of judicious borrowing under the guidance of his banker."

Lice-Proof Nests

WRITE QUICK for Catalog and SPECIAL OFFER
Nests won't cost you 1c
Your hens will pay for them in More Eggs



Get 20 to 50% more Eggs, have healthier hens, make more money, with the Everlasting Sanitary
KNUDSON
Galvanized Steel Lice Proof Nests. Costs less than wood. Unlimited guarantee. Send name today for Special Offer and interesting literature. 40,000 in use.
SEAMAN-SCHUSKE METAL WORKS COMPANY
Box 119 Manufacturers St. Joseph, Mo.

PoultryBook FREE

Just send your name and address and we will send by return mail, prepaid, a copy of "Bigger Profits From Poultry" and one of our Egg

Laying Charts. The book tells how to increase your egg production, raise every chick hatched, get more money for your live poultry and save your chicks from hawks and pests. It also contains valuable advice on treating the diseases of poultry. The Chart enables you to systematically record the improvement in the laying of your hens after following our advice. Send for this FREE BOOK and Chart today, whether you have five hens or five hundred. Mailed absolutely free. Simply send a postal to Macnair Poultry Products Co., 135 47 S. Gay St., Baltimore, Md., and ask them to send a FREE copy of the Book, the Egg Laying Chart and a full-sized standard package of Macnair's Chicken Powder (the guaranteed egg producer) on approval, all at their risk and expense.

\$12.95 Buys 140-Egg Champion Belle City Incubator

Prize Winning Model—Hot-Water, Copper Tank, Double Walls, Fibre Board, Self Regulated, Thermometer Holder, Nursery. With \$7.55 Hot-Water 140-Chick Brooder—Both only \$18.50

Freight Prepaid East of Rockies Towards Express
With this Guaranteed Hatching Outfit and my Golde Book for setting up and operating your success is sure.

My Special Offers
provide ways to earn extra money. Save time—Order Now, or write for Free catalog, "Hatching Facts"—It tells all—Jim Rohan, Pres.
Belle City Incubator Co., Box 100, Racine, Wis.

Baby Chicks

20 leading varieties, day old chicks. Safe delivery guaranteed. Postpaid. One of the largest and best equipped hatcheries in the United States. Catalog FREE.
Miller Poultry Farm, Box 502, Lancaster, Mo.

YES! RAISE PRACTICALLY ALL OF YOUR CHICKS. Incubator or hen hatched, in one of the cheapest and best brooders made. For success, economy, durability and profit, all who raise chicks, should write for circular TODAY.
E. O. PERRY, 42 W. MONTCALM ST. DETROIT, MICH.

BABY CHICKS—DUCKLINGS

Leading varieties. Order now for January and February deliveries. Prices reasonable. Safe arrival guaranteed.

Long Island Hatcheries, Rockville Centre, New York

INDIAN RUNNER DUCK CULTURE

Finest illustrated duck book published. Tells how to hatch and care for greatest egg producing fowls on earth. How to get a start. Quotes low prices on stock and eggs of finest strains. Sent for 5 cents postage.
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DAY OLD CHICKS

Guaranteed to 1,500 miles. Eggs for hatching. Bar. Rocks, S. C. W. Leg., S. C. & R. C. Reds, W. Wyman, Buff & W. Orp. Catalog free.
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Oldest, Largest and Best Poultry Journal

6 MONTHS' TRIAL 25 cts.

Averages over 100 pages per issue—tells how to feed, house and breed; how to secure high egg production; how to hatch and rear poultry successfully. Est. 1874. Only 25c for 6 months or \$1.00 for 3 years (36 issues). Stamps accepted.
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Don't Take Any Chances! Find Out What an Incubator is Made of Before You Buy. We will gladly send you samples of materials we use. Get our Catalog and samples before buying. We give 30 Days' Trial—10-Year Guarantee. These two well-made, nationally known machines—
130 Eggs 130 Chicks

Both Freight Paid East of Rockies Only \$16.25

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Large Size 180-EGG INCUBATOR AND BROODER, BOTH \$20.00.
WISCONSIN INCUBATOR CO. Box 46 Racine, Wis.
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World's Best Poultry Journal

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4 MONTHS' TRIAL SUBSCRIPTION 15c
SEND U. S. STAMPS

Tells how to keep poultry with greatest profit; 84 to 168 pages; 26th year. Best articles; expert advice; every number profusely illustrated. 1 yr., 60c; 2 yrs., \$1.00.
Reliable Poultry Journal Pub. Co., Dept. 126, Quincy, Ill.

PROFITABLE POULTRY
62 BREEDS Pure-Bred Chickens, Geese, Ducks, Turkeys. Fine Northern raised, hardy and vigorous. Fowls, Eggs, Incubators at Low Prices. Pioneer Poultry Farm. Valuable New Poultry Book and Catalog FREE.
F. A. NEUBERT, Box 314, MANKATO, MINN.

POULTRY MILLER'S American

tells all about raising chickens, care, feeding, etc. Contains beautiful colored pictures of best paying varieties and best layers, sent absolutely FREE
Eggs and Poultry for hatching at special low prices.
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ALL STYLES. 150 ILLUSTRATIONS. SEND 10 CENTS. INLAND POULTRY JOURNAL, Dept. 10, Indianapolis, Ind.

Gem Hatcheries and Brooders

Lead all. Guaranteed. 362,000 now in use. Cost only \$1. Thousands using them are raising 600 to 1,400 chicks a year. This lady raised 1,522 in 1919. Send stamp for Special Catalog.
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U. S. Expert, Morrisonville, Illinois.

60 VARIETIES Hardy Northern raised Chickens, Ducks, Geese, Turkeys. Pure-bred heaviest laying strains. Fowls, Eggs, Incubators, all at low prices. 24th year. Large Poultry Book and Breeders' Guide Free.
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BOTH for \$17.25

Freight Paid East of Rockies

Why pay more? For \$17.25 you can get these 2 unbeatable machines set up complete, ready for use, delivered, freight paid east of Rockies.
Money Back if Not Satisfied We will send both machines—let you use them 30 days—and if you don't find them satisfactory, send them back—we'll pay the freight charges and return your money. You are absolutely safe.

150-Egg Incubator—150-Chick Brooder Don't class a covered, dependable hatcher with cheaply constructed machines. Ironclads are not covered with cheap, thin metal and painted, like some, to cover up poor quality of material. Ironclads are shipped in the natural color—you can see exactly what you are getting. Made of genuine California Redwood, triple walls, asbestos lining, galvanized iron covering. Large egg tray, extra deep chick nursery, hot water heater, COPPER tanks and boiler, self-regulator, Tycoo thermometer, glass in door, and many other special advantages fully explained in free catalog. Write for it TODAY or order direct from this advertisement.
IRONCLAD INCUBATOR CO., Box 51, Racine, Wis.

You Take No Risk with an Ironclad

THE IRON COVERED INCUBATOR

Why pay more? For \$17.25 you can get these 2 unbeatable machines set up complete, ready for use, delivered, freight paid east of Rockies.
Money Back if Not Satisfied We will send both machines—let you use them 30 days—and if you don't find them satisfactory, send them back—we'll pay the freight charges and return your money. You are absolutely safe.

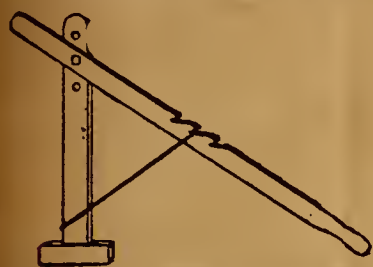
150-Egg Incubator—150-Chick Brooder Don't class a covered, dependable hatcher with cheaply constructed machines. Ironclads are not covered with cheap, thin metal and painted, like some, to cover up poor quality of material. Ironclads are shipped in the natural color—you can see exactly what you are getting. Made of genuine California Redwood, triple walls, asbestos lining, galvanized iron covering. Large egg tray, extra deep chick nursery, hot water heater, COPPER tanks and boiler, self-regulator, Tycoo thermometer, glass in door, and many other special advantages fully explained in free catalog. Write for it TODAY or order direct from this advertisement.
IRONCLAD INCUBATOR CO., Box 51, Racine, Wis.

Home-Made Devices We Made That You Might Use

By Readers of Farm and Fireside

How to Make a Jack

ANY boy with a little mechanical ability can build this handy jack in a very short time. Greasing the wagon or buggy will no longer be a hard task for him, but a little fun, as this tool makes it easy.

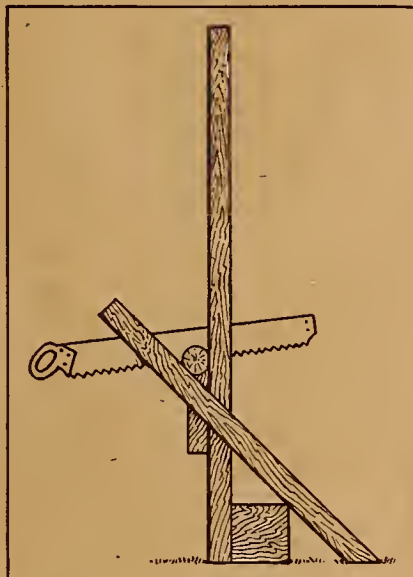


The upright is made of a board 6 inches wide, 2 inches thick, and 4 feet long. Cut off one foot and nail on bottom; bore three holes for bolt handle. Make the handle out of a piece of 2x4, cut in notches, and bore hole as indicated. Make a tie rod, or use a piece of wire, and use a bolt for a pin. This will prove to be a handy and useful tool.

R. L. Neasham, Iowa.

To Saw Squarely

IN THE early days of my farming I often needed round posts or poles to be sawed with square ends. I never could measure them square or hold them to saw, so I finally conceived the idea of putting three hard-wood stakes, two inches square and four feet long, against my woodshed walls, which were boarded with hemlock boards 12 inches wide. Years of sunshine had dried out the boards so that a crack about one-fourth-inch wide was between each one. I fastened the stakes with 20-penny spikes to sills inside of shed, and put a hard-wood board, one-inch thick by six inches wide, on outside of wall, to make all boards solid, thereby making a strong buck and using the cracks in walls as a miter



box. This held all poles firmly, and I could saw them perfectly square into any length without removing the pole until all sawing was completed.

I soon found it valuable for other purposes. I needed a new plank hog trough in a hurry, and I only had a 12-foot hemlock plank, six inches wide. I placed the plank in this frame, or buck, measured off 4½ feet with a yardstick, and began sawing. All ends were perfectly square, and in about twenty minutes I had a new trough all spiked together.

I have had occasion to cut large sticks of timber 8 to 10 inches square accurately, and it holds them firmly, without any jerky motion.

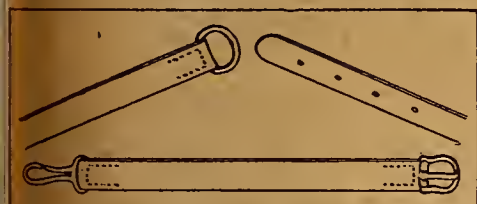
A. W. Wheeland, Pennsylvania.

To Fasten Team Lines

HERE is a little kink that I've been using for some time on my team harness. It saves time and a lot of bother besides.

A buckle is sewed on one end of about a foot of strap, and a snap on the other. A ring is sewed on one end of the line, and a few holes punched in the end of the other one.

The snap goes into the ring, and the buckle allows the lines to be adjusted for length, and when I want a longer line for



harrowing or any such work I have it quickly.

When not using the connecting strap, I snap it on some part of the harness that will hold it without bothering the horse. Thus it is always with the harness where I can find it when I want it.

Earl Rogers, Ohio.

How I Fasten All My Cows at One Time

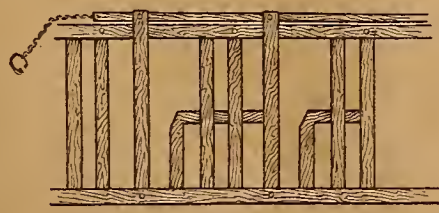
THE handiest time and labor saver I have found is explained in the following diagram.

I wanted a stanchion that cows with horns could put their heads into, and that could be opened or closed by standing at one end and pulling a rope. This stanchion will open 7 or 8 inches wider than any I have ever seen, and was made at home with comparatively small expense.

The upright pieces are 2x4-inch boards



Stanchion opened



Stanchion closed

four feet high, and are of native lumber, so as to be full two inches. The top and bottom parts of the frame are made double of 2x4-inch boards, with the up-and-down pieces between. All up-and-down pieces are spaced four inches apart, except where the cows' heads go, which is seven inches. The top board which works back and forth is long enough to reach from one end to the other and is made of a 1x2½-inch soft pine board. The uprights which work back and forth are of two-inch dressed stuff, so as to

work smoothly. The whole is securely bolted together, and makes a sturdy construction.

In the end of the top piece a half-inch rope is attached which runs through a pulley and back so as to be near the door, where it is fastened with a horseshoe and a ring. A heavy screen-door spring pulls the stanchions open when the rope is unfastened, and holds it open until the cows' heads are in, when you pull the rope and

the cows are fastened. The rope is about four feet long when the stanchion is closed, and passes through a large staple at the door so it reaches back of the cows.

One does not have to go near a single cow, yet you tie them all up at once, and let them all loose together.

Some may think that you cannot get all of them in at once, but my cows soon learned to do this. Put in your feed before letting the cows in and see how well it works.

Harley Manuel, Kansas.

Make Sure of Your DE LAVAL Cream Separator



Early in 1920

There's no happier or better way of starting the New Year right than by making use of a new DE LAVAL, if you are either without a cream separator or are using an inferior or half-worn-out machine that should be replaced.

For three years now, thousands of those who wanted a DE LAVAL have had to wait weeks for it and many have had to buy a second grade separator. The demand has simply exceeded the possible supply, though more DE LAVALS have been made each year than ever before.

More and better DE LAVALS will be made this year than ever before—as many as available plant additions and skilled workmen can produce—but the demand gives every indication of being even greater still.

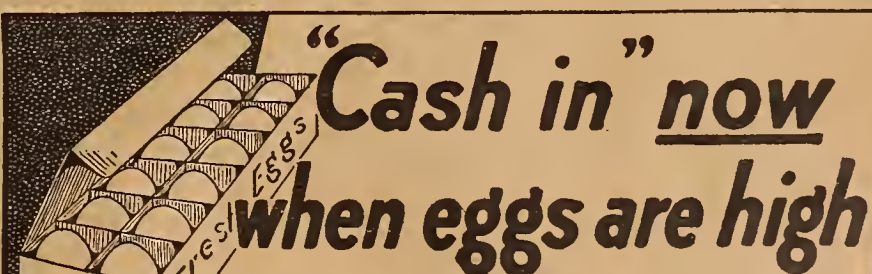
Order your DE LAVAL now. Make sure of getting it. Let it save half its cost by Spring.

See the nearest De Laval local agent at once, or write the nearest De Laval office below for any information desired.

THE DE LAVAL SEPARATOR CO.

165 Broadway NEW YORK 29 East Madison Street CHICAGO 61 Beale Street SAN FRANCISCO

50,000 Branches and Local Agencies the World Over



HAVE eggs to sell—plenty of them—all through the season. There's a nice profit in table eggs, so making money is only a matter of healthy hens—assured by the use of

Pratts Poultry Regulator

Tones up the digestive system and keeps layers and breeders in a normal natural condition so that they keep on laying. Used by thousands of successful poultrymen and farmers all over the world. Always sold with this guarantee:

"Your Money Back if YOU are Not Satisfied"

Sold by 60,000 dealers There's one near you

Write for Pratts NEW Poultry Book—Free

PRATT FOOD COMPANY Philadelphia Chicago Toronto

Makers of Pratts Animal Regulator, Hog Tonic, Cow Remedy, Dip and Disinfectant, Veterinary Remedies.



A Strong Wire Staple --and a Felt Washer

Little things, yet they
lengthen the life and increase
the usefulness of collar pads.

Pat. in U.S. Dec. 1, 1914
Pat. in Canada Apr. 6, 1915



New Patented Hook Attachment

A strong wire staple reinforced by felt washer firmly grips hook to body of pad even though cover has been weakened by sweat and long usage. This lengthens life of pad. It is the greatest improvement since we invented the hook. *Used on all our Hook Pads and only on pads made by us.*

Why STUFFED Collar Pads Are Better

Unstuffed collar pads lack the soft, absorbent, cushion-like features which distinguish Tapatco Pads, filled with our specially prepared Composite stuffing. Stuffed pads are the best safeguard against shoulders of horse being chafed, galled and bruised.

Low In Price---Long Lasting

Tapatco Collar Pads embody every desirable feature in pad construction and their constant use is real economy. They cost so little and do so much that no one should

work a horse without them. These pads are for sale by dealers everywhere. See your dealer at once and get a free copy of our new booklet, "Horses and Their Care"

We also manufacture a complete line of Riding Saddle Pads.

The American Pad & Textile Co. Greenfield, Ohio

Canadian Branch Chatham, Ontario
"Thirty-eight Years in Making Pads."



Keeping the Cows Well

By Dr. A. S. Alexander

HOW vital it is that every milk-producing cow should be free from disease, seeing that infants often are largely dependent upon cow's milk for their sustenance!

Milk is a secretion from the blood elaborated in the mammary gland (udder), and there supplied with added ingredients. To have healthy milk preconceives the idea that the cow's blood must be healthy. Given a healthy cow we should so feed and house the animal that she will remain healthy, and so produce safe and wholesome milk.

Many of the diseases attacking cattle are avoidable. This is well demonstrated by the extreme rarity of contagious foot-and-mouth disease among cattle in America. At all times the disease is more or less prevalent somewhere in Europe, but our live-stock sanitarians keep it out of this country. Occasionally it has appeared, but almost instantly has been stamped out. It never appears spontaneously. Always it comes from a previously existing case. So with other infectious diseases of cows.

Tuberculosis, for example, cannot occur spontaneously. Each new case comes from an old one. Do away with the seed-producing case, and the seed from it, and no new case can occur. Bacilli of tuberculosis are its seeds. Kill them, and there can be no crop. So the modern veterinarian tests every cow with tuberculin, and discovers and eliminates those which react because they are infected. Afterward he does everything in his power to make the remaining cows resistant against disease, and to prevent them from coming in contact with germs of disease. Johne's disease (chronic bacterial dysentery) may also be kept out, as we now have a test for it similar to that for tuberculosis. Anthrax, blackleg, and hemorrhagic septicemia also are germ diseases, but different from tuberculosis, in that they may be prevented by vaccination just as people nowadays are immunized with serum against typhoid and vaccinated against smallpox.

Even many of the simpler ailments of cattle are avoidable. Were scrupulous cleanliness observed and maintained in the cow stable, and as regards the udder and teats of the cow and hands of the milker, cases of cowpox, mammitis or garget, and sores of the teats would be comparatively rare.

Cleanliness and proper hygiene would also help to prevent many of the skin diseases of cattle, and some of the common cases of lameness.

Cost of Limestone

By L. E. Call

IN FIGURING the comparative value of finely pulverized unburned limestone and hydrated lime, it is customary to figure 1,480 pounds of hydrated lime as being equivalent to 2,000 pounds of ground limestone. Upon this basis a ton of hydrated lime would be worth \$10.80 while finely pulverized unburned limestone was selling at \$8 a ton.

You will therefore see that the pulverized limestone is somewhat cheaper than the hydrated lime at the prices quoted, provided the pulverized limestone is sacked. I assume that the quotation on hydrated lime is for sacked goods.

There is another item of expense that must always be considered when lime is applied, and that is the item of labor. If it is necessary for you to haul the lime considerable distance from the railway station to your farm, it may be cheaper for you to use hydrated lime even at a higher price, because it will be necessary for you to haul only about three fourths of a ton of hydrated lime to equal one ton of ground limestone. There is also the additional expense of spreading in the field the extra bulk in the ground limestone.

Hydrated lime is also in a finer state of division than it is possible to secure in pulverized limestone; consequently it is more effective at first, but eventually even the larger particles of the pulverized limestone become effective in soils. For this reason it is usually advisable to make a heavier application of ground limestone than of hydrated lime to start. An application of two tons of finely pulverized ground limestone, or a ton to a ton and a half of hydrated lime should prove satisfactory.

The sire can make or break the herd. Send the scrubs to the butcher's block.



Own a "SELECTED" Farm In Western Canada —Make Bigger Profits!

The most wonderful opportunity in the world for Business Farmers is in the "SELECTED" Farms, which can be bought for \$15 to \$40 an acre along the lines of the Canadian National Railways in Western Canada.

"SELECTED" Farms

These "SELECTED" Farms are carefully chosen from the cream of the richest wheat and cattle country in America, to meet your special needs, by experts representing 14,000 miles of railway, whose advice, while free to settlers, is of great practical value.

A Cordial Welcome

Western Canada extends a helpful hand to homeseekers. Friendly neighbors—splendid schools, churches and social life—warm, sunny growing summers and dry cold, healthy winters—await you in this wonderfully prosperous "LAST WEST."

Big Profits in Wheat, Dairying, Beef and Dairy Cattle

"SELECTED" Farms average more than 20 bushels of wheat per acre. Under specially favorable conditions a yield of 50 to 60 bushels per acre is not uncommon.

Dairying is exceptionally profitable. That soil and climate are well adapted to it is shown in greatly increased production and high quality maintained. A world-wide market awaits all that Western Canada can produce.

Beef and dairy cattle yield great profits. Stock thrive on the prairie grasses, which in many sections cure standing and make fine hay. Cattle and horses require only natural shelter most of the winter and bring high prices without grain feeding.

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There is a small tax on the land, but buildings, improvements, animals, machinery and personal property are all tax exempt. Terms on "Selected" Farms: About 10 per cent cash down, balance in equal payments over a term of years; interest usually 6 per cent.

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Special railway rates will be made for homeseekers and their effects to encourage personal inspection of the "SELECTED" Farms along the lines of the Canadian National Railways. Full information will be sent on request. WRITE OR MAIL COUPON TODAY!

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and a small brush will thoroughly smoke your meat and give it a Delicious Flavor. The "WRIGHT" Way of curing meat is easier, quicker, cheaper and gives better results. No fooling with fires. No danger of meat spoiling. No drying out or shrinkage.

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You won't feel the cost at all. The machine itself will save its own cost and more before you pay. We ship any size separator you need direct from our factory and give you a whole year to pay our low price of \$38 and up. Read what Alfred Geatches, North Jackson, O., says: "We are getting more than twice the cream we were before. The separator is very easy to clean and runs very easy." Why not get a fully guaranteed New Butterfly Separator for your farm and let it earn its cost by what it saves?

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Cream Separators have these exclusive, high-grade features: Frictionless pivot ball bearings bathed in oil—self-draining bowl—self-draining milk tank—easy-cleaning one-piece aluminum skimming device—closed drip-proof bottom—light-running cut steel gears, oil bathed. Guaranteed highest skimming efficiency and durability. We give

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ABSORBINE

will clean them off permanently, and you work the horse same time. Does not blister or remove the hair. \$2.50 per bottle, delivered. Will tell you more if you write. Book 4 R Free.

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to shoe horses with they hold it long. They save time, trouble and unnecessary expense. **CAPEWELL** nails hold a shoe tight and

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Dehorned cattle are safer, easier handled, fatten better, give more milk. Remove horns the safe, sure, humane way. Powerful cogged "V" blades make toughest horns a quick, easy clip. Crushing impossible. 70,000 in all parts of the world. Fully guaranteed. See your hardware man. Circular free.

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Old Shag Marion Forster Gilmore

Shag is a real dog who went overseas with a farmer from Sioux Falls, South Dakota. His master was killed in the battle of Château-Thierry, and Shag refused to leave him, returning even when dragged away by a member of his company. To quote a newspaper account: "The Americans went over the top at dawn. Shag did not greet them. Instead, they found his body, riddled with machine-gun bullets, across that of his master."

OLD SHAG and his master had traveled together, From home farm to camp and then over the sea; Unflinching they'd roughed it in all kinds of weather, True brothers-in-arms were his master and he.

They had both known the mud and the funk and the stench The boys have to face when they go up the line; And Shag had caught rats in the shell-shaken trenches And stuck by his master with never a whine.

When, in the gray morning, the shrill whistles sounded And every grim soldier went over the top, By the side of his master, right over Shag bounded And ran through the shell-storm with never a stop.

Death soon found the man—and then Shag, deeply grieving, Lay down by his side in the thick of the fray. Through the lone night he lingered, it may be believing His friend would awaken at dawning of day.

But certain it is that they could not be parted; What cared he for life if his master was gone? In the darkness he mourned him, old Shag the true-hearted, And dead, on his body, they found him at dawn.

—From "Our Dumb Animals."

Can Your Community Equal This Record?

MODERN farm machinery, automobiles, home conveniences, and farm papers do not necessarily mean that a farm is being handled in the best possible way, but are a pretty good indication of well-directed farm operations and efficient management. By taking a survey of a county or a State, a fair idea of the kind of agriculture practiced there can be deducted. Compare your own community with the list below, which was made as a result of a survey in a Wisconsin county. If you come up to this standard you can consider yourselves progressive and fairly up-to-date. If you fall below you have something to work for. Out of 3,412 farm homes surveyed, the following were reported:

- 498 country homes were supplied with running water.
- 320 had bathrooms and inside toilets.
- 407 had power washing machines.
- 520 had electric or acetylene lights.
- 129 had open-air sleeping porches.
- 850 had screened porches.
- 918 had pianos.
- 1,651 had daily newspapers.
- 1,516 had current magazines.
- 2,126 had farm papers.
- 1,878 had automobiles.
- 97 had gasoline tractors.
- 139 had fruit-spraying outfits.
- 903 had incubators.
- 127 had milking machines.
- 1,234 had silos.

They found 19 creameries and 28 cheese factories in this one county. It is significant that nearly nine of every ten of these farm homes were occupied by owners. The farm tenant homes were only 398. Nearly everything worth while can happen in an area of home-owning farmers, and nearly everything falls to pieces under the curse of excessive farm tenancy. The county school superintendent, teachers, and children could assemble the facts in your county in a single week.



Make Your Milkers Pay

Good Health—Good Appetite—and Good Digestion are the essentials of a good milker.

Dr. Hess Stock Tonic promotes health—makes cows hungry. Remember, it takes a healthy, hungry cow to convert a big mess into pails of milk day after day. Dr. Hess Stock Tonic produces appetite, aids digestion, conditions a cow to stand the stuffing, cramming process necessary for heavy milking. Dr. Hess Stock Tonic contains the salts of Iron that supply rich red blood so necessary to cows in milk. It contains Laxatives and Diuretics that assist the kidneys and bowels to throw off and carry off the poisonous waste materials that so often clog up the system during heavy feeding.

Dr. Hess Stock Tonic

Ever notice a cow slack up on her milk—not quite so keen for her mess—apparently not sick? Her system is clogged. This never occurs where Dr. Hess Stock Tonic is fed. Start right—by conditioning your cows for calving with a course of Dr. Hess Stock Tonic before freshening.

There is not a day during lactation that Dr. Hess Stock Tonic cannot be fed to cows at a profit. This is especially true where heavy feeding is the practice. Dr. Hess Stock Tonic is good alike for cattle, horses, hogs and sheep. It makes the ailing animals healthy, the whole herd thrifty. It expels worms.

IMPORTANT: Always buy Dr. Hess Stock Tonic according to the size of your herd—five pounds for each cow to start with. Get it from the responsible dealer in your town. Feed as directed and note the results in the milk pail.

25-lb. Pail, \$2.25; 100-lb. Drum, \$7.50

Except in the far West, South and Canada

Smaller packages in proportion.

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Dr. Hess Dip and Disinfectant

Keeps the Dairy and Stables Healthful and Clean Smelling

Try This Harness 30 DAYS FREE

Let me send you this wonderful no-buckle harness at my own expense. Look at it. Examine it. Compare it with old style harness. Put it on your team and use it for a month at my risk. Give it any and every test you can think of. If you are not convinced that it is the hand-somest, the strongest and best harness you ever saw or tried, pack it up and send it back. I'll pay the freight.

No Patching--No Mending--No Repair Bills

Buckles cut harness straps. Rings and dees wear straps in two. Examine your own harness and verify this. You'll find more than 100 places where buckles, rings and dees are wearing it; places where you'll soon have to repair it. Walsh Harness will save that trouble and expense. Statements in this advertisement

are backed by thousands of letters from satisfied users in forty states. The Walsh is a proven success in actual operation on farms for over six years.

See How Buckles Cut and Tear Straps



NOT A BUCKLE ON IT MADE IN ALL STYLES

Walsh HARNESS

- No Buckles
- No Rings
- No Loops
- No Holes in Straps
- No Billets
- Adjustable to fit any size work horse.

Lasts a Lifetime

Walsh Harness has 864 points of improvement over old style harness. Besides having no buckles, no rings, no dees to wear the straps, it has no loops or billets to waste leather or to catch the lines—no holes to weaken the straps. A built-in hame fastener does away with hame straps. Hitching is made easy by the handy, safety neck yoke hooks.

Costs Less Than Other Harness

The price of the Walsh is less than that of any other harness of the same grade materials. Yet it outwears two sets of the best old style harness and saves you cost of repairs. Try the Walsh at my risk for 30 days FREE. See for yourself what a wonderful harness it is and you'll never waste another dollar on old style harness as long as you live.

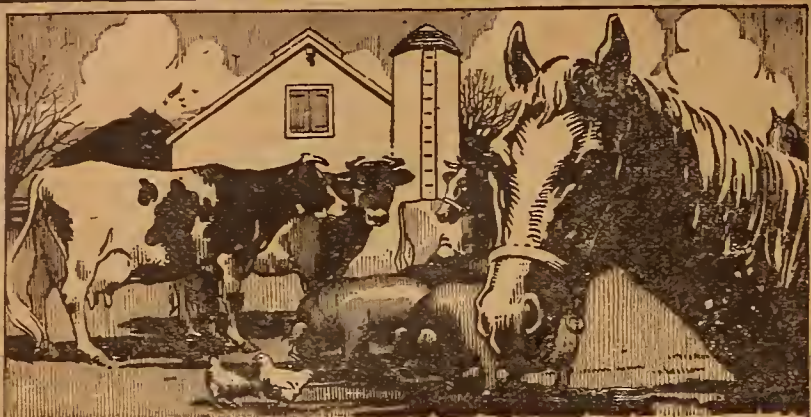
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YOU know the dangers of neglecting painful lameness, bruises and swellings. Put Sloan's Liniment on the job and let it relieve those poor dumb faithful beasts from suffering.

Apply Sloan's Liniment to the throbbing part and let it *penetrate without rubbing*. Prompt relief will follow, the pains and aches will subside, better work and better worth will be your reward.

Buy an 18-ounce bottle today. Six times as much as you get in a small size bottle. Bear in mind, Sloan's Liniment has been the World's Standard Liniment for thirty-eight years.

DR. EARL S. SLOAN, Veterinary Surgeon, whose portrait appears on every genuine bottle of Sloan's, the World's Liniment, has practiced the profession for more than 20 years and has been a buyer and owner of live stock all his life.

With a natural love for the animal, and from a boy with an acute instinct in recognizing their wants and changes of conditions, was able to treat them with rare ability. Dr. Sloan's career has been one of unprecedented success.



It is 38 years since he first placed Sloan's Liniment on the market. Its wonderful power as a pain dispeller was acknowledged from the first and has saved much suffering of man and beast.

Sloan's World's Liniment

KEEP IT HANDY

\$19.95 Sent on Trial Upward American Cream SEPARATOR

Thousands in Use giving splendid satisfaction justifies investigating our wonderful offer: a brand new, well made, easy running, easily cleaned, perfect skimming separator only \$19.95. Skims warm or cold milk closely. Makes thick or thin cream. Different from picture, which illustrates our low priced, large capacity machines. Bowl is a sanitary marvel and embodies all our latest improvements. Our Absolute Guarantee Protects You. Besides wonderfully low prices and generous trial terms, our offer includes our—

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Never Hurts Horse

Horses will not get sore necks if they wear this collar, because it can be instantly adjusted without sweat pads, to fit any horse, fat or thin, perfectly. It distributes the pressure evenly over the shoulders and never causes injury to any one spot. Your horses will never be punished by ill-fitting collars if you get the

FITZALL Adjustable Collar

Four Perfect Fitting Sizes in Each Collar

Why buy a collar for each horse when you can use this collar on any horse and make it fit better than any other collar? Why not buy this collar that you can use all of the time? Why hang collars away to rot when the horse is not in use?

Most dealers are glad to sell the Fitzall Collar because they know it will save your horses, save you time and money—(fewer collars to buy, no sweat pads, no medicine for sore shoulders, etc.). Some don't sell this collar. They think more of their profits than your good. Others want to sell a collar for every horse, not merely one for each harness.

Fitzall Collars are Guaranteed, money back if you're not pleased. Write for full information and prices. If your dealer can't supply you we will.

JOHN C. NICHOLS CO.

Makers of the Famous "Master-Brand" Harness, America's Best
686 Erie Street, Sheboygan, Wis.



How I Drove Fear Out of My Heart by Climbing Mountains

(CONTINUED FROM PAGE 6)



Obverse side of the gold medal the Peruvian Government presented Miss Peck for her wonderful accomplishment in scaling Huascarán, which never had been done before. The mountain itself, over 21,000 feet high, is pictured on the medal.



Reverse side of the same medal which was presented to Miss Peck by the Government of Peru.

finished." If he, doing the work of two men, should collapse near the summit, I felt that we should all be lost. A slip and a slide on that steep incline would be followed by a drop of 2,000 to 3,000 feet to the glacier below. The descent, at first alarming, was soon rapidly negotiated, and by 5 P. M. Gabriel and I threw ourselves on the blankets in the tent. No long rest for me. A quarter of an hour perhaps, then I must sit up to melt snow for tea; but Gabriel did not move when I called him to supper. He was too tired to eat, which convinced me that I had been wise in the retreat. When I called him Monday at 3:30 A. M. he said no, he could not go; so, as our provisions were about exhausted, later in the day we began our descent, arriving after dark at the rocks, having spent nine nights on the glacier in vain. The good people of Yungay, who had been much alarmed over our long absence, greeted us as ones risen from the dead.

Two days after my return I again began preparations for the ascent. "What!" they said. "Going again?" "Pobre, Miss Peck! Pobrecita! Do you want to go again?" "No," I replied, "I don't want to go again. I have got to go!" Next time, with four porters and the two Swiss guides, things went more rapidly. Always one night was spent at a gold mine at 10,000 feet, the next at the edge of the ice at 14,000 to 15,000 feet. With all in good condition and no relaying, in two days over the glacier we reached the saddle, and the next morning set out for the summit, the Indians remaining at the tent. As it was very cold and windy, I wore every stitch of clothing I had brought—three suits of woolen underwear, two pairs of tights, canvas knickerbockers, two flannel waists, a cardigan jacket, two sweaters, four pairs of woolen stockings, high boots, and a woolen hood and face mask, with a canvas hat that has climbed all my big mountains.

After an hour of easy going we made a long diagonal traverse on an appalling slope among crevasses and overhanging ice walls, then pursuing our upward way along a ridge where we were exposed to the icy blast. For hours we pressed onward, with but a single pause, besides a short halt for luncheon, when we were too cold and tired to eat the meat which had frozen in the *rucksack*, as had the tea in the water bottle. We had chocolate and malted milk tablets, and they helped give us new strength.

Some distance below the summit, Rudolf, the one who had been ill before, declared himself unable to go on. However, Gabriel, who had been cutting all the steps, urged him to proceed, himself taking part of the pack that Rudolf had been carrying, while the rest was deposited in a crevice. An hour later, reaching the apparent summit, we found a broad ridge to our sorrow slightly sloping upward toward the north. Here the wind was still stronger, and I suddenly realized that my left hand was freezing. Early in the day Rudolf had dropped one of my fur mittens, so that on my left hand I had been obliged to place two woolen mittens and one half mitt. Twitching them off I rubbed my hand vigorously with snow. It soon began aching, which signified its restoration. But it would surely freeze again.

The poncho which I had asked Gabriel to bring now saved my hand, but, though with it I remained fairly warm, to the end it almost cost our lives in the descent. After trying in vain on account of the high wind to take observations with the hypsometer, we continued to the far end of the ridge. I wasted no words, but thought: "I am here at last, after ten years of effort, but shall we ever get down again?" Taking photographs of the other peak and the mountains in the rear, as evidence of our successful ascent, about 3:30 P. M., with no rest, we turned to descend.

I had from the beginning greatly feared the outcome. Not far down I saw something black fly away—one of Rudolf's mittens. Later he lost the other. His inexplicable carelessness almost cost us our lives. My recollection of the descent is as of a horrible nightmare. After dark, on the long traverse, the little moon at my back cast a shadow on the steps in front. My poncho swaying in the wind sometimes concealed the step I was about to take, too late for me to draw back. Perhaps missing the step by an inch my foot slipped on the smooth slope. Crying out to warn the guides, as I fell to a sitting position, I then to my horror began to slide down that glassy incline. I slid 15 or 20 feet before being held by the rope. Then, being unable to move, the guides had to come together and haul me up.

Several times I slipped, once pulling Rudolf too, who with frozen hands and foot was stiff with the cold. Gabriel, however, stood firm, thus saving our lives, though later he said that when he saw Rudolf go he thought we were all lost. Rudolf afterward declared that he never expected to get down alive.

I said to myself, "I must keep cool and do my best," but after one of those horrible slides—well, there was nothing to do but plod along. The way seemed endless, but at last Gabriel said: "Now we are safe, and if you like you can slide."

"What a tremendous relief; I knew then that we were on the slope above the tent, where we arrived about 10:30 P. M. Too tired to eat or sleep, we were thankful to sit down in safety, or later to lie down to rest. The next day we were still so tired that no one proposed descending, but Friday we came down to the rocks, and Saturday to Yungay, where a physician was immediately called to attend poor Rudolf, both of whose hands and one foot were frozen. It was necessary later to amputate half of one hand, several joints of the other, and half of one foot—a sad result of his carelessly losing his mittens.

The altitude of the peak which we ascended, 21,812 feet, is still the highest point on this hemisphere which has been attained by any North or South American, and about 1,500 feet higher than Mt. McKinley.

What did I learn from my experience? I learned not to jump at things without reason or knowledge.

I learned that very few persons can really be depended upon.

I learned that it is possible to conquer fear. Now, with the mountain-climbing championship of the Western Hemisphere won, I knew that I had conquered fear. Some of us are afraid of our jobs, some of our weakness, some of this, that, or the other. No one gets anywhere until he has conquered his fears and driven them out. Then all things are possible.



This is Miss Peck herself, in mountain-climbing attire. Climbers tie themselves to each other with ropes, so if one falls over a cliff the others can pull him back to safety. One cowardly guide deserted Miss Peck on a mountain top during one of her climbs by untying the rope and descending, leaving her on the peak.

"BALL BAND"

Look for the RED BALL

Your feet feel good when you walk out of the store in Rubber Boots bearing the Red Ball Trade Mark.

They feel just as good when you've worn the boots a week, or a month. For all "Ball-Band" Rubber Footwear is made on natural, foot-shaped lasts.

Look for the Red Ball when you buy Rubber Footwear. On the heel or arch of every piece of "Ball-Band" Rubber Footwear, also on the knee of every "Ball-Band" Boot. It means More Days Wear.

Sixty thousand dealers sell "Ball-Band." More than ten million satisfied wearers testify to its high quality.

"Ball-Band" Light Weight Rubbers are shapely, well-fitting, keep feet dry, save expensive shoes.

Our illustrated booklet, "More Days Wear," shows our complete line of Rubber and Woolen Footwear, with full descriptions. Ask your dealer for it.

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Our latest introduction. Heavy cropper. Grows in clusters of from five fruits upwards. All marketable size. Early to mature. Bright red—solid. Excellent quality. Pkt. 15c, 1/2 oz. 90c, oz. \$1.60, 1/4 lb. \$5.00, lb. \$17.00.

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The greatest canning tomato in the world. Large, bright red, perfectly smooth. Big yielder. Finest flavor and best keeper in cultivation. Ideal for canning and catsup. Pkt. 10c, 1/2 oz. 30c, oz. 50c, lb. \$6.00.

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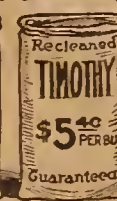
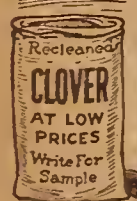
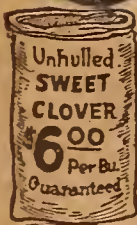
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BERRY
Saves You Money
ON PURE
Tested Guaranteed
SEEDS

Does the Shoe Fit You?

By Earl Rogers (Ohio)

MAYBE you have thought from time to time that your herd of cows ought to be tested. In fact, I am sure you have, because the majority of farmers who have a few cows think this very thing. I have been an official tester for some years, but I am on a farm now, and I have talked with the men who do not test.

This is what they think: "My, it is an expensive outfit for me to get just for four or five cows! It will cost \$6 or \$8."

Now, I wonder, did you ever think how long it will take to shove \$8 worth of high-priced feed into a cow that is not paying her way? The answer is easy. The first cost looks big. It is—until you compare, and then it seems very, very small.

The very best plan for an owner of a small herd—provided he is interested in getting better production—is to join a testing association. It is about as cheap, and I really think it better than doing your own testing. But there are counties which do not have such an organization, so if you live in such a county you will have to do the next best thing and test your own herd.

I find from observation that it is a very easy matter to keep putting the testing off until it is not done in the same month at all. That is why I feel that the testing association is the better way of keeping tab on your cows. I know what my cows are doing pretty much, but there is a tendency to let the testing go a few days when something else is pushing on the farm.

But suppose that you found just one cow in five that did not test three per cent butterfat, and was not even a heavy milker: could you afford to keep her? But without testing you do not know that you haven't two or three of them. The last figures I saw on the subject showed that the average for the State of Ohio was 160 pounds of butterfat per cow. Very likely it is higher now. Say that it is 200 pounds a year: can you afford to keep a cow on your farm that produces that amount? And you must take into consideration that there are scores of cows producing less than the average, or the average would not be so low. The record-breaker, with from 600 to 900 pounds and better of fat for a record, would make a much better average if the poor ones were not so low. Now, are you sure that all your cows are even making the average?

This is where the association tester comes in to good advantage. He aims to keep exact tab on the feed of your cows; so at the end of the month's work he can tell you just about what your cow has produced, and its value at current prices, and also the cost of the feed she has consumed. A tester who is on to his job can do this easier and better than you can. Take my word for it, that you will never be sorry that you invested in a cow-testing association's fees. But if you can't do that, invest in a testing apparatus, and use it once a month. The higher the price of feed and butterfat, the more you can't afford not to do this.

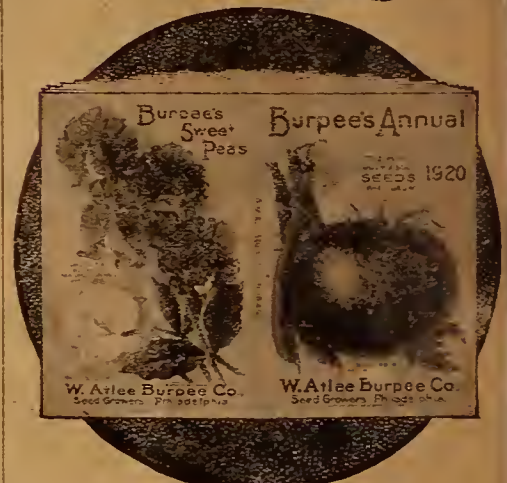
Young Men are Needed in Agriculture

"THIRTY agricultural college graduates were brought into Montana this year from other States to take good positions," says Prof. M. J. Abbey of the agricultural education department of the Montana State College, "and there is more demand over the country to-day for agricultural college graduates than for men of any other type of training. I have compiled figures to prove this."

"There is a demand in this country for 17,500 agricultural college graduates. There were, last year, 6,500 men in agricultural extension service, 3,500 were employed in the colleges and experiment stations, 2,500 were employed as teachers of agriculture in vocational schools, and it is estimated that 5,000 were employed by corporations and farm, dairy, and ranch owners, implement companies, and the like, in commercial work."

"During the war many of the positions were filled with insufficiently prepared men because of the lack of trained men, and many of these poorly prepared men will be replaced as soon as possible by trained men. The demand for trained men is rapidly growing in all directions. Compensation is liberal. There is a scarcity of men in every State to take the new teaching positions in agriculture opened by the Smith-Hughes Act. The supply can hardly catch up with the demand during the next ten years. There is no better line open at this time to young men."

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All for only 25 cents

Send 25c for these five varieties—one regular size packet of each kind—Just what you want for an Early Garden—Get ahead of your neighbors.

Vegetable Peach
grows on vines, is an enormous yielder, fruit is about size of Peach, gold in color, excellent for preserves and pickles. Recipes for cooking, canning and preserving with packet.



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is a wonder for earliness, has produced radishes in 15 days from seed. Deep scarlet color, very crisp and tender.

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is a beauty, sow any time, very tender and crisp, resists heat, wet and drouth, one of the grandest of all lettuces.



Extra Early Tree Tomato
grows strong and erect plants, producing great quantity, large handsome red fruits, very early, perfect beauty.

Extra Early Tree Tomato



Fancy Pickles
is one of choicest strains cucumbers in America for pickles, also good for slicing. Very early, producing great quantity of fruit and continues to bear all summer. Their beauty will surprise you. This is the most profitable and interesting collection of High Grade Early Vegetable Seeds I have ever offered. Order today, entire lot 3 varieties, 1 regular size packet of each 25c or 5 packets of each \$1.00. 1920 Seed Book filled with High Grade Garden Seeds free with every order.

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STOKES SEED FARMS CO.
Moorestown, New Jersey



A Wagon That Ran Fifty-six Years

SOME time ago I visited a farm of 20 Acres, and there I saw an old wagon which was doing the farm work in as good shape as a new one could. I asked the age of the wagon, and found that the owner had bought it of the original purchaser, who had first bought it in 1863.

At first thought this seems an impossibility, because so many of us leave a wagon out in the rain and the sun too often. This one was inside practically all the time it was not in use, and it had been frequently painted. When it was time to paint, the whole wagon was washed just like a carriage or automobile, and any needed repairs were taken care of. No places were left for rot to start.

There has been only a new tongue and a bolster on the rear end in all these years. There may have been a new reach, though the owner was not sure. The high wheels and narrow tires were changed and three-inch tires put on when the roads were stoned. Reaches and tongues often break in new wagons, and so practically nothing had been replaced because of decay or old age.

Implements that last fifty-six years must be made right in the first place, but must also be cared for. Some time ago I was on a drive of 600 miles, and noticed the very few remaining old-fashioned wooden windmills. But not one of those I saw was unpainted. Paint is the reason they are there to-day. The unpainted ones were gone long ago. I noticed also that the other buildings on the farm where the windmill was were usually in good shape, which points to a moral that needs no mention here.

EARL ROGERS, Ohio.

Life of a Motor Truck

A MOTOR truck of standard make, with attention such as should be given a machine of the class, should run 100,000 miles. Some trucks have longer records than this, which would seem to indicate good running conditions and excellent care. One should expect a certain amount of repairs, and these repairs should be made as soon as apparent wear is seen. In this way only is it possible to get the maximum service from a vehicle.

A Power Bean Harvester

By Robert E. Jones (California)

THREE methods of detaching bean vines from their roots for threshing are used by California growers. Some vines are pulled, some are cut by horse-drawn knives, and now the tractor is used.

R. Lovick of Irwin City, California, faced by a shortage of labor, was compelled to find some means of cutting his beans quickly. He had an 8-16 horsepower tractor, and didn't see why he could not handle a large sled cutter outfit with that machine



The machine that Lovick built

just as small cutters are drawn by horses. He went to work on a plan, and the result was the outfit shown in the picture.

Instead of pulling the cutter, however, as with horses, Lovick pushed it with his tractor. He rigged up a staff on the front end of the cutter by which he could raise or lower the machine with a small block and tackle outfit from the seat of the tractor. It was necessary, also, to put an extension on the crank of the tractor with a handle in front.

Four five-foot knives were attached to the front of the sleds, and they skimmed under the surface of the soil, cutting off the vines. A pole, shown in the picture, was attached at an angle to the right runner to push the beans into windrows after they were cut loose.



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How to Figure How Much You Earn

A simple plan which will show any farmer how much his personal labor income is a year

TO FIND your labor income for the year use this plan. First put down how much your farm is worth—not what you would like to sell it for, but what you could actually get for it if you put it on the market. This figure is usually about halfway between what you would like to get and what you would get from a forced sale.

Then figure in what stock you had during the year. Sales of all sorts of products are taken into account, as well as any expense in repairing or buying machinery, the purchasing of seed, fertilizer, etc. In fact, list everything you are ahead under "receipts," and whatever you spent on the farm under "expenses."

From this simple little problem in arithmetic you get the figure showing how much more you have at the end of the year than at the beginning.

Take a typical case: A man has a farm and equipment valued at \$18,000. His expenses for the year are \$2,900. His receipts are \$4,000. He figures that he made \$1,100 during the year, and he thinks it isn't so bad. But he hasn't taken into account the capital invested. If he invested that \$18,000 elsewhere he would get at least four per cent interest; if he had to borrow it, he would very likely pay six per cent. So we take the average, and say that his capital invested earns five per cent. Five per cent of \$18,000 is \$900. So his capital earned \$900 of that \$1,100, and the grower himself, working hard all year, earned only \$200. In other words, \$200 was his "labor income." He would have made more money if his capital had been invested in Liberty bonds and he had worked out by the day. All the planning and thought he put into his farm operations didn't bring him a cent. Remember too, that you should receive something also for the work your family has done.

If your labor income doesn't come out the way you would like, don't be discouraged. You might have had bad luck with some crops or live stock, or you might not have hit favorable markets. Maybe, though, there is something you can do another year that will make your labor income compare more favorably with the salary of the man of the same ability in town. Remember, too, that it costs him a lot more to live than it does you and your family in the country. Where he is struggling with the rent problem, you have a comfortable home that costs you nothing, and your grocery and butcher bills are greatly reduced by the things you raise yourself.

But if you feel that in some way or other the salary you are earning for yourself can be increased, don't stop figuring until you have worked out some ways of increasing your farm profits. It may mean increased crop yields through using more fertilizer. It may mean better stock by using a pure-bred sire or higher grade dams. The secret may be decreased labor costs through the use of farm power. Whatever it is, there is a way for you to solve it if you decide to do it.

H. S.

How the Tractor Helped

[CONTINUED FROM PAGE 24]

When I planted the orchard I had not accurately foreseen the labor problem. Luckily, the tractor has come to the rescue. With it I draw my power spraying outfit, pull out the dead trees to replace with others, and provide belt power for sawing them up into firewood. In peach season it draws the trucks and wagons loaded with baskets to the car at the railroad station. It provides this 12 horsepower on the drawbar by burning kerosene, costing no more for an all-day's operation than horse feed for a day at present price of grain and hay, and when it is not working it is not eating. It has not cost me \$10 in repairs.

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Trees from the Woodlawn Nurseries are vigorous growers and bred-to-bear. Our 44 years of successful growing experience has been devoted to the production of thrifty strong rooted stock. We have the exclusive sale of the wonderful new Old Beauty Apple.

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When You Select Your Tractor

By H. H. Haynes (Illinois)

THE selection of a tractor is an important business matter. Buying a tractor for a considerable investment. Satisfaction from the investment demands that you get back through the service of the machine all of the money that you expend, either with profits in proportion. You buy a tractor in order to do farm work at a better profit, and not because your neighbor across the road happens to own one. Tractor manufacturers are making your problem in operating a tractor their problem in building one. They have combined technical knowledge with practical methods, and most makers will give you real service.

It becomes, then, a question of what size type tractor to buy. In making your selection, ask yourself these two questions: Will this tractor do the work I have to do on my farm?

Can I operate it economically?

The size of your farm, number of acres for cultivation, character of soil, and the number of horses it will allow you to retain, all have a bearing on tractor purchase. Unless you plan to do a great deal of outside work, a small farm demands a small tractor, and a large farm a larger one, this point is often overlooked.

I have in mind two farms in Henry County, Illinois. One lies across the road from the other. The smaller one is a quarter-section, but has only 100 acres under cultivation. The other contains 200 acres, with 180 in crop. The owner of the larger farm has a four-plow tractor, and the man with the larger acreage a two-plow tractor.

There are two cases of poor judgment in buying. I'll wager the man with the small acreage and the large machine, if he were to investigate, would find he was going into his profits to keep his tractor. The investment is there, whether he is at work, and he hasn't enough work to keep it busy. His was not an economical

purchase. His friend with the big farm and the tractor has also made a mistake, although not such a serious one as his neighbor's.

His tractor is undoubtedly making a profit, but when you take into consideration his larger acreage, which carries the possibilities of a greater variety of crops, a three- or four-plow outfit would be better suited to his needs, and bring him in much more returns from his investment.

The size you buy should be governed by the kind and amount of work you have to do. Tractor operation should not by any means be confined to field work alone. Indeed, it is quite possible you will find many opportunities to use a machine out of the field than in. Belt work of all kinds, for yourself and neighbors, hauling, road-building—there are any number of tractor uses to keep the outfit busy.

Whatever your selection, remember that a tractor is only a machine, and as such it needs a reasonable amount of care and attention. A neglected tractor will never give good service.

Dobbin in Green

DOBBI, in his lifetime, may have worn black or white or tan, or even red, but when he passes over the meat scale and presents himself to the housewife in the form of steak or roast or anything else, he will be decked in green. The United States Inspection Service of the United States Department of Agriculture, in order to comply with the provision of the law that horse meat shall be conspicuously marked, has decided to stamp the meat with a harmless green ink. The Bureau of Meat Industry stamp is distinctively six-sided, and bears the words "Horse Meat." Horse meat is likely to be on the market in appreciable quantities shortly. A report has been received at the Department of Agriculture from Billings, Montana, that the initial shipment of a lot of about 2,000 horses has been received for slaughter. A report from New Mexico says that 10 range horses in that State should be slaughtered.

An agricultural journal, recently commenting on the slaughter of horses for meat, said that the elimination of undesirable horses not only will save feed for more profitable cattle and sheep, but will also add to the leather supply, and increase the stock market. Department of Agriculture reports say that hides from range horses that have lived in the open should be of excellent quality.

DOA.

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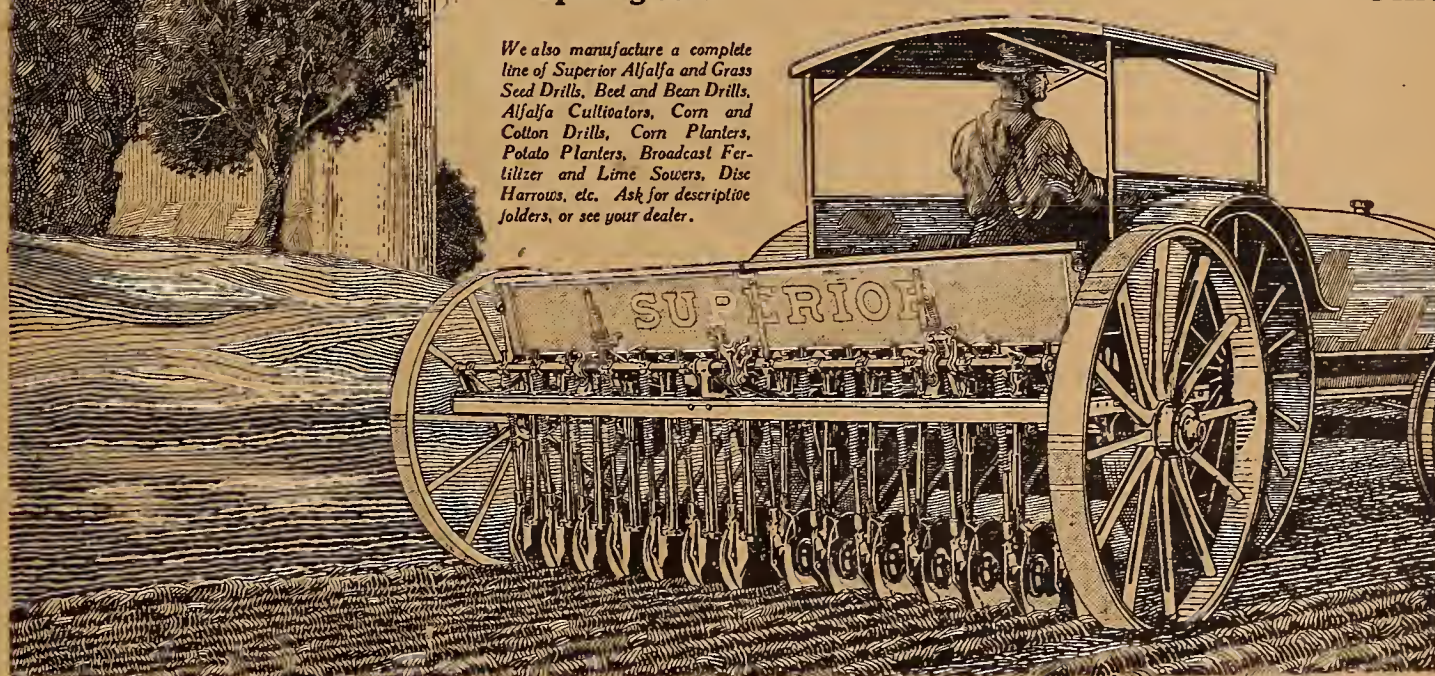
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You may have good luck if you buy before you see our 1920 catalog, but—why risk a season's work? You'll enjoy looking this book over—send a postcard today.



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Write for Salzer's 1920 Catalog—168 pages, profusely illustrated—275. Salzer varieties shown in full color. A postcard will bring it to your door.



Our Letters to Each Other

This is where we take a few lines every month to talk things over, so if you've got anything on your mind, let's hear from you

IT SEEMS that we have insulted a goat. At any rate, we are accused of it; and certainly so seemingly impossible a thing should not pass without instant apology, which is hereby tendered, not only to the particular goat hereinafter referred to as the party of the first part, but also to all goats under the sun and elsewhere.

The letter of complaint, penned by Messrs. Fisk & Sergeant, milk goat breeders, Thousand Trails, Murphys, California, holds forth as follows:

"Ordinarily we are even-tempered persons, but there is one thing that 'riles' us beyond words, and that is to have goats maligned.

"On page 32 of your October number is a picture of a small boy and two girls, each with a goat kid. Joe, the boy, is quoted as saying that after playing with these kids his folks 'wear gas masks.'

"Now, we don't believe he said it. Barring the possibility that Joe was playing with a buck (Billy) goat during mating season, he could not possibly have noticed any odor from goats, especially kids. They do not smell. We have 230 of them, and we ought to know.

"It's prejudice, like the mistaken belief that the milk of goats is strong-flavored."

Well, as we said before, we apologize, and we're sorry, and all that sort of thing, and we do admit that Messrs. Fisk and Sergeant have elevated goats in our estimation considerably by their goatly discourse; but still, if for no other reason than to save our face, we must insist that when a goat does smell it makes up for all the other goats in the world that don't smell.

Now for the South

Maybe a lot of you folks below the Mason and Dixon line think, with Mr. Milligan R. Wagner of Anna, Texas, who wrote the following letter, that FARM AND FIRESIDE is unrepresented in the South. Far from it. As witness the reply to Mr. Wagner by J. F. Duggar of Alabama, who is our Corresponding Editor on Southern crops and soils, and whose advice and counsel is at the command of every one of you, at any time. Said Mr. Wagner:

"You have educated writers—they are good too. Did you ever listen to an uneducated eighth-grade farmer of the South? Being in this kind of a fix, I'll just say a few words and go:

"Most of your writers are from the North—interested in the North. You have a number of subscribers in the South who need a talk or two about cotton and other products of their soil.

"We have a local enemy to fight. The boll worm and boll weevil. Texas' crops this year are 50 per cent on account of these pests. They must be stopped, and the very best way I can find to do it is to beat them to it by growing an early variety of cotton, and by using chemicals at the proper time. I have produced what I call a 90 per cent crop by planting an extra early variety of cotton.

"There's something else hurting the cotton farmers of Mother Earth, and that's their method of cultivation—that's it. Texas' land is turning white. Washing away to the Gulf of Mexico, never to be seen again. By all saints and sinners under the sun, why don't the tillers of the soil do something? I say, terrace the land. Hold the rain waters in the soil, and stop all this washing. Grow crops of wheat, corn, sweet clover, oats, velvet beans, and peas—some kind of crops that will leave something on the soil to plow into the soil, and stop running it in cotton so much.

"White spots of land need something plowed into the soil, like weeds, grass, straw, or just any old thing that will rot. This vegetation plowed into the soil will loosen it up, and take up the rains which will make available the acid to break down the mineral foods in the subsoil. The sun will bring the mineral foods to the top and turn the soil black. The more you plow into the soil the richer it gets. The time is coming, dear people, when we have got to find out the facts in agriculture."

To which Mr. Duggar replied:

"I entirely agree with you as to the importance of discussions, in the columns of

the paper mentioned, of the questions of vital interest to Southern cotton producers. Indeed, the question of maintaining an adequate production of American cotton so that the United States may continue practically to control the cotton situation of the world is not merely a Southern question, but one of national importance. As you doubtless know, the balance of trade in our favor has been largely due, prior to the abnormal war times, to the exportation of an enormous value of cotton, cotton oil, and cottonseed meal.

"Not all of the thinking part of the American public has come to a proper realization of the handicap under which Southern farmers are now producing this great world staple. I allude particularly to the widening territory in which the cotton-boll weevil takes his heavy toll, and to the certainty that within a very few years the entire producing area of the United States will be paying this heavy tribute.

"Economists and public men outside of this region who have sometimes questioned the legitimacy of recent prices for cotton are evidently unacquainted with the very heavy damage that on an average is done by the boll weevil, and hence overlook the considerable charge against the cost of cotton production that must be made to cover this very large element of risk.

"The methods that you mention for combating, or rather circumventing, the cotton-boll weevil are those most generally applicable—namely, the growing of an early variety, and the use of commercial fertilizers of such kinds and in such amounts that the maturity of the crop may be hastened. With these two must go in the greater part of the Cotton Belt a vigorous direct warfare against the boll weevil by the picking of adult weevils before squares appear on the young cotton plants, and by picking and destruction of squares that have been attacked. To these direct methods of attack must now be added for certain soils and climatic conditions poisoning with calcium arsenate, where the crop gives promise of a large production per acre, but conditional upon the keeping down of the number of boll weevils. All these steps result in a tremendous increase

in the cost of cotton production, a point on which the general public needs to be educated.

"I agree entirely in your conclusion that soil improvement must receive ever-increasing attention in the Cotton Belt, and that important elements in this are the terracing of rolling lands, the incorporation of vegetable matter in the soil, and the general practice of such rotation systems as will make maximum use of the appropriate leguminous plants, both for forage and for direct soil improvement."

FARM AND FIRESIDE The National Farm Magazine

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You are invited to ask questions of any or all of these men in their respective fields. State your problem clearly and fully, enclosing a stamped self-addressed envelope for reply. Address each editor care of Farm and Fireside, 381 Fourth Avenue, New York.

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This is Mrs. Harriet Olive Goble, ninety years old, of Harrison, Ohio, a reader of Farm and Fireside for forty years, and her grandson, Major Francis M. Goble, who has two gold service stripes

Meet Grandmother Goble

It isn't every day that an editor has the privilege of printing the picture of a subscriber who began to read his magazine ten years before he was born. But that's exactly what is happening on this page this month, and very proud we are of it, for there must certainly be something worth while in a publication that readers will stick to for forty years. And, in honor of the occasion, here follows, complete, the letter about her from her son, Francis M. Goble of R. F. D. No. 2, Harrison, Ohio:

"I am sending you a photo of my mother and my youngest son, Major Francis M. Goble, and with it I will give you a short sketch of our family, and I think you will agree with me that it is quite out of the usual.

"Mother was ninety years old July 6, 1919, is the mother of twelve children, four sons and eight daughters, and all living except one son, who died at fifty-seven years of age. Mother has fifty-four grandchildren, sixty-seven great-grandchildren, and one great-great-grandchild.

"There have been but two deaths in our family in seventy-two years, my father and the brother spoken of.

"Mother is quite active, shows up with the chickens every morning, personally tends her flock of chickens and turkeys, and does her churning for four cows.

"Our family is nearly 100 per cent American, as Mother traces her lineage back to the landing of the Mayflower. Her grandfather was the fifth governor of Ohio, one hundred years ago, Othniel Zooker. At the governors' gallery at Columbus you

may see his portrait with the other governors of our great State.

"While she, of course, feels proud of her sons and daughters and their numerous descendants. And well she may! through all those years she has never to blush or apologize for any unmannerly conduct of her descendants.

"As for our fighting records, her forefathers were in the war for Independence and the war of 1812, four brothers were in the war of 1861, and five grandsons were in the World War.

"Grandmother Goble, as she is called by her friends, has for forty years been a devoted reader of FARM AND FIRESIDE.

A fine letter and a splendid record Goble. So much venerable age and a dwelling upon reminds us of the story of a man who was looking for a certain 'oldest citizen.' He went to the house was directed to, and there found a very old man in a rocking chair on the porch.

"Are you John Bronson, the oldest man here?" he asked.

"No-o-o," quavered the old man, his son.

"Oh," said the visitor, "and who is your father, if I may ask?"

"Why," said the old man, "he's up putting Grandpa to bed."

The Girl's Head on the Penny

We have noticed lately that there are nearly as many of the old Indian head pennies as there used to be. The old penny is taking their place, and the old penny goes completely out of circulation it is interesting to look at a cent or two in the history of this little which will grow and multiply so rapidly if given half a chance in the game of Interest on Investment.

Since the year 1793 there have been coined in the United States approximately 3,500,000,000 one-cent pieces of various sizes and designs. The bronze penny in circulation before the Civil War were than twice the size of those now in use.

In 1835 the Government made an attempt to place upon the new cent coin the head of George Washington. Some Indian chiefs about that time had traveled from the Northwest to visit the great father, and when they saw the new coin they were very much interested. One of the chiefs took his feathered helmet and warbonnet and placed it on the head of the coin. The company was an artist immediately sketched her and hand picture to her father. Mr. Longacre, designer of the competition for a likeness upon the cent projected, under the sanction of the hour, resolved to contest the prize offered by the Government. His delight, the officials accepted it, and the face of his daughter appeared upon the coin, which was circulated about the country for nearly a century.

Savage and civilized life was thus mingled in the American face and the Indian headgear. The face of Sarah Longacre has gone into more hands, more pockets, more homes, more stores, more schools—yes, more churches—any other coin in the United States, in the world.

It is said that the dollar once boasted its superior value to the cent, declaring the latter unworthy to be in its company. "Ah," replied the cent, "you may be valuable, but I am more pious, for I go to church every Sunday, but you are seen there."

And now you know who the girl on the penny was in real life.

Good luck to you all, until the next time.

George Martin



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Aladdin houses are manufactured and shipped direct from the Aladdin Company's own mills in Michigan, Mississippi, North Carolina and Oregon. Wherever you live Aladdin Houses come to you in a straight line from the nearest timber region. Aladdin National Homebuilding Service means shorter routes, quicker delivery and lower freight rates for builders in every part of the United States. Three days to a week are saved in shipments reaching destination. Complete Sales and Business Offices are maintained in connection with each mill.

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The Aladdin System of Homebuilding has been practicing for 14 years the principle the world has only learned during the war—the elimination of waste of lumber and labor. The Aladdin Book explains this system thoroughly, shows how 20 feet of lumber is cut from a 16-ft. board. The great Aladdin Organization, composed of experts in every branch of homebuilding, stands ready to help you build your home at a saving. Put this group of experts to work on your problem. Send for the interesting book "Aladdin Homes," No. 1005.

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FARM & FIRESIDE

The National Farm Magazine

FEBRUARY 1920

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In This
Issue—

Shall We Decrease Production?

Learn The Secrets of getting High Priced Eggs

By Mrs. H. H. Johnson



THERE is a woman in southern Minnesota who makes more money on her poultry than her husband does on pure bred hogs. There is another woman in Virginia who gathered 20,000 eggs during 1918 and 1919, with the biggest months during the time when eggs sold at highest prices. And there is still another woman, Mrs. Maud H. of Eagletown, Okla., who says, "While my husband is busy farming I make expenses at home with Old Trusty."

I could name dozens, yes, hundreds of women in all parts of the country who are making good incomes on poultry. We hear of so many big successes that I often wonder why it is that more people don't raise poultry when it's so easy to make money.

We have always had such good results with our own poultry that Harry asked me to write this advertisement to readers of *Farm and Fireside*. He said, "Let us see if we cannot get a few of its 750,000 readers to learn more about the profits they can make on eggs and chickens."

Where the Profits Come In

Why is it that some people make more money on poultry than others? That's what I am going to tell you. I am going to tell you the secret of getting high priced eggs. That's what you want to know. Anyone can raise chickens that lay well when prices are cheap, but the man or woman whose pullets start laying and keep laying when prices are high makes the most profits. How do they do it? Send me your name and

Get Our Book of Poultry "Know-How" Free

You'll find the answer here. You'll find out why some women make ten-dollar bills where others make single dollars. You'll find out why it's as easy to sell eggs at top prices in November, December and January, as it is at low prices in March, April and May. But most of all, you'll find out how easy it is to get the eggs when they bring the best prices. Send for this book. We are glad to mail it free. It will tell you about

We Pay Freight Express

We also have small size Trusty that can ship by parcel. Quick shipment from St. Joseph, Mo., Center, or Omaha, wa,

Old Trusty Incubators and Brooders

more than anything else it will tell you how to make money with poultry.

Have a Money-Making Business of Your Own

If you owned a hundred-egg size Old Trusty. Make hatcheries during the next several weeks. Next spring should have a good sized flock. In a few months you have laying hens and plump broilers ready for market or your own table. Do you know of any other business that can turn as big a profit so quickly? A profit many times the amount of your original investment.

Here's One Secret

Folks who make the most money own a good incubator. There is no argument about that. The secret of getting high

priced broilers and high priced eggs is in the time when the chicks are hatched. That means hatches long before "Biddy" starts to clucking and sitting on a nest so the pullets begin to lay before the time when old hens begin to moult. How else could you get early hatches without a good incubator?

Hatch eggs in an incubator and hatch them early. Let the hens keep a-laying. The first hatch usually pays for the incubator and setting of eggs.

But Write for Our Book

This is our annual catalog for 1920. Harry and I wrote it ourselves in odd moments at home and at the office. I call it our poultry raisers' "How" Book.

"How to keep hens a-laying in winter," "How to pick money makers in a good sized flock," "How to hold down expenses," "How to build up a practical egg farm," "How to build an economical poultry house," "How to provide a practical brooder shelter at low cost," "How to market eggs and poultry," and hundreds of other "Hows" that I know you are interested in, as well as our offer on Old Trusty Incubators and Brooders.

Mail the Coupon

or a postal or a letter and let me send you this book 15-AJ. I could say a whole lot about Old Trusty—how well it's made, how dependable it is, how well it satisfies our 850,000 customers, how easy it is to understand and operate, but I'll leave that for our book. We build Old Trusty in four handy home sizes, with or without the galvanized metal cover. But that's for our book to tell you. All I want to do is to show up the money-making possibilities in poultry raising. I'll be glad to hear from you. Tell me something about your poultry.

Yours truly, MRS. H. H. JOHNSON.

M. M. JOHNSON CO.
Clay Center, Neb.



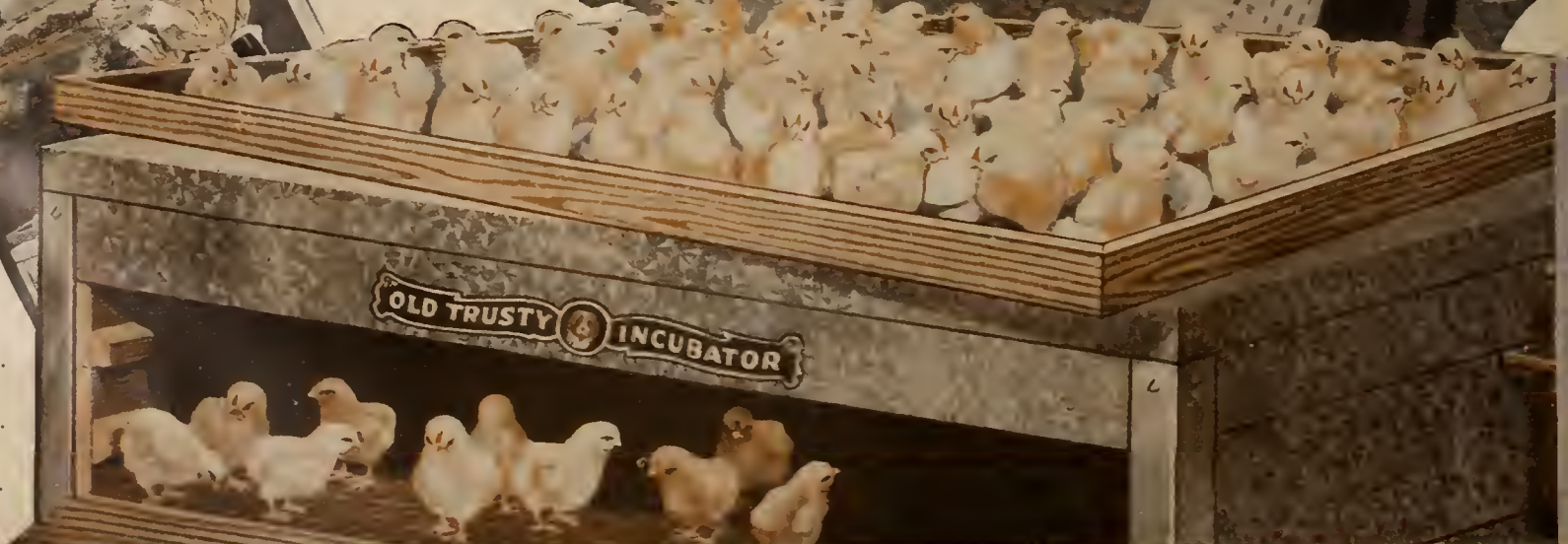
Harry Johnson
The Incubator Man"

1 Mrs. Johnson to write this page *Farm and Fireside* and give you man's idea poultry. it is and I the facts will it you. Send catalog and help you a poultry JOHNSON.



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Sectional view of the Mueller Pipeless Furnace.

THE Mueller Pipeless can be installed almost as quickly as setting up a stove. No pipes in cellar, no tearing up of floors or walls. Cut but one hole for the handsomely finished register face, (an ornament to any room) and that is all. Correct location of furnace and register is always determined by Mueller experts from room plan of house. The Mueller costs less than most heating systems of other types and is exceedingly simple to operate. Requires attention but once or twice a day. It burns hard or soft coal, wood, lignite or gas, keeps every room upstairs and down comfortably warm, and healthfully ventilated with clean, moist air, and cuts your fuel bills one-third to one-half. The Mueller is equipped with a double fire door. Lower door can be opened independent of the upper. In addition to this and the "Big 3" the Mueller has other construction features of importance.

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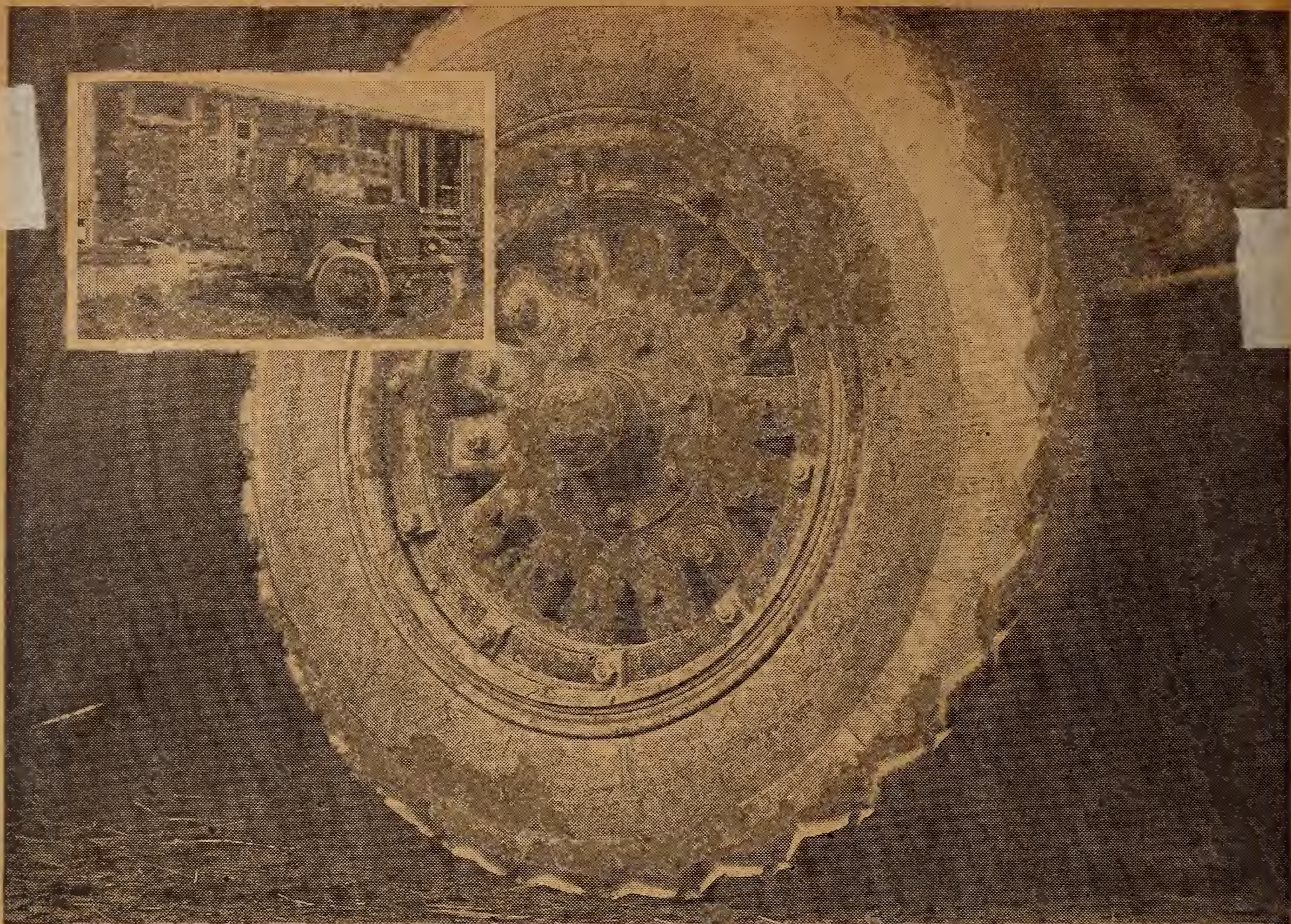
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THIS story of saving time and increasing income by hauling on pneumatics is just one of a great number now coming from the rural communities of this country.

In counteracting the high cost of labor, the farmer is motorizing, with pneumatic truck tires and other means, and thus making his work more pleasant—reducing the drain on brawn and investment.

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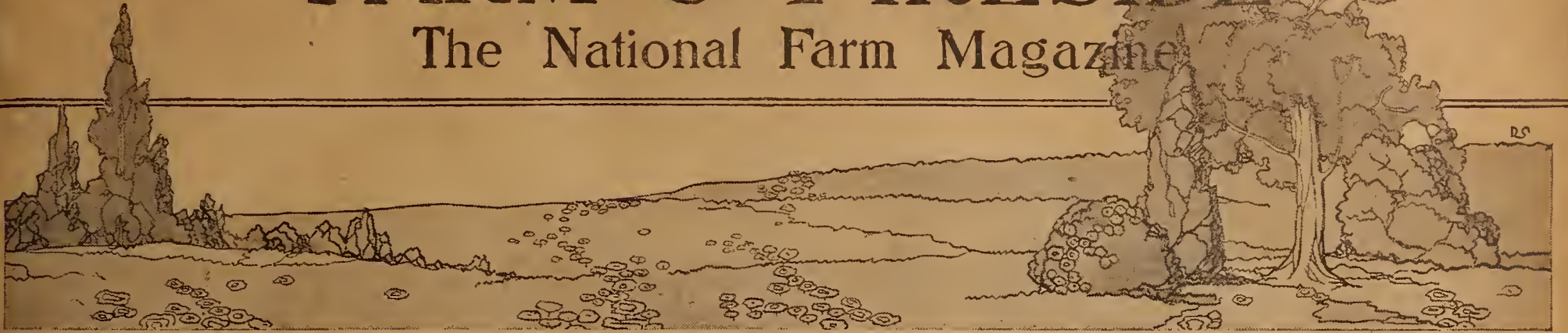
They know that pneumatic-shod motor trucks haul grain to the thrasher, ensilage and fodder to the cutter and wood to the buzz saw so quickly as to enable such other motor equipment to work to full capacity and earning power.

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GOODYEAR



Shall We Decrease Production?

By William Johnson

Decoration by Rudolph Schwartz

ALMOST before we know it February's snow and bluster will have disappeared. And then, with a switch to lighter underwear, a jingling of trace chains, and a harking back in memory to all the alleged cures and reliefs for tired feet and galled equine shoulders, we shall be afield with disk and seeder, fairly embarked on the chanceful currents of another season.

But perhaps you're not thrilled at that prospect this year. No? Well, my friend, here's a hand of sympathy and understanding. So you too, along with some millions of other farmers, are up against it for hired help. Tough, isn't it? A situation as full of complications as a man with St. Vitus dance getting the rheumatism.

Still, a lot of farmers are going to make more money during the next two or three years than they would if labor were plentiful. And you can be one of them. How do I make that out? Just this way: A food shortage that would be short enough even if all our farms were manned for full protection will be made much shorter by a great many farmers cutting down their crop acreages. That means higher prices—more dollars and motor cars for you and those others with the grit and cleverness to run your farms at full capacity. That is the silver lining to the farm-labor cloud, and it is a wise citizen who schemes out a way these February days to turn that cloud inside out and get the lining into his purse.

EUROPE is bound to depend upon America for food between now and the time she gets back to full production.

Meanwhile, there is small likelihood of our own farms voluming forth a bumper yield. One large agricultural organization has gone on record with a resolution calling for one-fourth decrease in next year's crop acreage. This is not an idea originating in the minds of a few men, but one that has its roots out in the farthest fields of the land. During the last six months I have talked with farmers of Missouri, Kansas, Illinois, Iowa, and Wisconsin, and have tried to get their honest-to-goodness opinion of the situation. It varies, of course, with the degree of trouble experienced in getting labor, but it sums up to a pretty definite conviction that unless the labor shortage is relieved a food shortage is almost certain to follow.

Some men who are blessed with boys enough to do all their farm work, or fortunate above the average in having some of the good old-fashioned sort of help, see little to worry about. Others, who have found it necessary to put in a stretch of the farmer's famous eight-hour days—eight hours before noon and eight afterward—are exceedingly pessimistic, and make no effort to conceal it. And there are very many more of this class than there are of those who have a sufficient home supply of labor. One such, an Illinois man, positively glared at me when I mentioned farmhands. After a snort or two, he said:

"I'm through trying to hire men. It was bad enough before the war, but for the

last two years I've searched, begged, advertised, and prayed for help, and what did I get? Heaven only knows, I don't! If they ever had any regular job before, it must have been something they could do while they ate and slept. A good many were only trying to dodge the draft, and as soon as the war ended they got back to town like they were going to claim an inheritance. It's too bad the Government couldn't have got a couple I had, into the German Army. With their gifts for breaking machinery and making trouble, they'd have done the Germans more damage than a division of crack troops.

"From now on I'll put in no more crops and keep no more stock than the boy and I can handle in an honest day's work.

The rest of my land will go into grass. Every paper you pick up tells about some union striking for bigger pay and shorter hours. Pretty soon they'll have their day cut down so it won't be worth their while to go to work at all. Then, I suppose, they'll figure they can stay home while the poor thick-headed rubes out in the country put on an imitation of a perpetual motion machine

while they themselves must work all kinds of hours for an always uncertain income. They blame that movement for a good bit of their labor troubles—and they blame it rightly.

"We help to pay the high wages for short days two ways," said a Missouri farmer. "We must compete with the factory in hiring labor, and we have to pay a portion of the prevailing high wages in every manufactured article we buy. The manufacturer must pass his costs on. We can't. We can't meet the city wage scale, because there isn't that money in farming. So we have to take such labor as is willing to work for less, and outside of a few men who like farming so well that they'll work

at it for less pay, and those who are doing it because they intend to be farmers, we naturally get pretty poor stuff. Farming simply can't be kept up to the production of past years that way."

That is an opinion a great many farmers express—doubtless the opinion most farmers hold. And it means that, unless all signs fail, there is going to be a considerable reduction of our

a way of doing it that will not resemble old-fashioned slavery at its worst. I don't believe in any farmer breaking all the laws of health in a scramble for more money.

"But how is it going to be done otherwise?" a good many will ask. It is about as easy to explain offhand why a black cow eating green grass gives white milk, as it is satisfactorily to answer that question. Every farm is something of a problem unto itself, and a man can only solve the labor question on that farm when he has full knowledge of all conditions. My purpose in this article is to show the opportunity that exists for the men who can find their personal solutions, and to make a few broad observations that may help them to do so.

A lot of folks think it is only necessary for the farmer to plunge into the free and unlimited use of machinery and power, and all will be salubrious and lovely. They forget, or possibly do not know, that there are several limitations to this plan. One is the farmer's purchasing power. Contrary to popular belief, the average farmer is not bowed down and corrupted with a sinful surplus of wealth. He has found the American dollar about as skittish an article to corral as any other worker has—and rather more so than some. His profits have been none too wide, and the uncertainty of his income is great.

Then, a good bit of our land imposes rather narrow restrictions on the use of machinery. It is rough, stony, stumpy, or in small tracts. Co-operation would solve the latter difficulty, and labor would remove a sizable percentage of the others. But there you are again—labor!

AND on the largest, smoothest farm there is much that machinery and power cannot do. They cannot build nor repair fences, prune trees, shingle the granary, drive the cows to and from pasture, paint the kitchen, pick up stones, blast out stumps, clear out the stalls, whitewash the chicken coop, oil the windmill, file the hand saw, no split kindling wood. If the thousand and one small things that hands must do are neglected, you soon have a sloppy-looking farm that is losing more from a multitude of little leaks than any farmer can stand. An ambitious man will slow up other work if he must, to put that farm to rights, or he will get off it at the earliest opportunity. The other kind of man will sooner or late be put off.

Thus it is clear enough that machinery and power cannot alone replace the farm hand. For one thing, they require labor to operate, intelligent labor—precisely the kind that is scarcest. But it is equally clear that machinery and power might do a lot of work that is now done by hand, or not done at all. The tractor is a solution for plowing and other field work on farm large and level enough to make one a paying investment. Of late years, in some localities, many small farmers have been buying them, and finding it profitable to do custom plowing for their neighbors after their own work is finished, or are making rigs pay by operating a silo-filling or well-drilling outfit or a threshing machine. Many others might do the [CONTINUED ON PAGE 30]



THIS is William Johnson himself, and when we asked him to tell us something about himself to go with his picture, he wrote:

"I was born in a log house on a pioneer farm in northeastern Wisconsin, thirty-four years ago. Got a common-school education, supplemented by much reading of agricultural literature and the illuminating effects of assiduous application to the ravenous requirements in labor of the above-mentioned farm.

"Never saw a street car or a town of more than two thousand people until I was twenty-seven. Thing that I'm proudest of is that one season I held the neighborhood record for minimum time of pitching on a load of hay in the field, and for number of loads pitched on in a day. My hobby is the dairy cow, for the reason that I was practically brought up with 'em, and that dairying brought back the fertility to the soil of our whole neighborhood, after grain-farming had depleted it, and sowed that same neighborhood pleasantly thick with red barns and comfortable houses.

"The above will doubtless be all you want, perhaps more."

to feed them. Not much! Anyone who thinks I'm going to work fourteen hours a day, so others will only have to work six or seven, has got me measured wrong. I didn't kick during the war, but that was different. I'd have worked longer hours if I could. But blamed if I'm going to break a lifelong habit of sleeping occasionally just so the fellows in town can live a week on a day's pay—and have the rest for cars to ride out in the country Saturday and watch me getting ready for another big day Sunday."

The big majority of farmers with whom I have talked share this Illinois man's feelings toward organized labor. They are opposed to an eight-hour day, with designs on a five-day week of even shorter hours,

tilled acreage during the next couple of years. It isn't a strike or anything of the sort, nothing but a plain case of weariness from overwork, and a bit of disgust with the queer turn the industrial world is taking. It looks to the farmer as if every other class of workers was out for a good time at his expense. He is dead willing to do his share—when did he ever do less?—but declares that he will not buy up a lot of bigger and louder alarm clocks and larger and brighter lanterns so he can put in still longer days in order that the city worker may have nice long evenings beginning at four o'clock in the afternoon. For that you can't blame him, and yet—well, it creates a promising situation for the man who is determined to work his farm right up to the fences, and can find

An Old Montana Rancher Tells His Big Rule for Success

By Peter Wagner

PETER WAGNER is sixty-four, but he doesn't look over fifty. He is over six feet—one of those big-boned fellows. With his black soft hat, with a wide rim, and his horseshoe mustache, also jet black, he looks somewhat like a movie sheriff. Peter is an inveterate smoker.

Wagner has a line of quaint philosophy. He doesn't brag, but hands it out just as he believes it. He speaks solely from experience, and is serious in every respect. He has an envious reputation both on the range and back in the East. Everyone knows him as a breeder of pure-bred cattle and horses.

I HAVE been ranching in Montana and Idaho for forty-four years, and in that time I have learned one important fact that may serve you in good stead sometime. It is this:

"Never follow the crowd! Don't do what everybody else is doing. When nobody grows potatoes, you grow them. When everybody grows them, you let them alone. When stock is so high that everybody wants it, that is the time to let it alone; but when it is so low that nobody wants it, that is the time to buy."

I pass that along to you almost word for word as my father gave it to me. He didn't mean, and I don't mean, for any man to follow that rule blindly. What it means is that it pays to do your own thinking, and not to let yourself be swayed by popular opinion. Never be frightened by the cry of "Fire!" Always insist on seeing the flames.

I'm just an old rancher, and you may not think it worth your while to pay any attention to what I say, but I have accumulated about \$100,000 worth of property, including 3,800 acres of deeded land and some good cattle and horses, and I got every bit of it by the common-sense application of that rule—never follow the crowd. And when I came to the Northwest forty-four years ago I didn't have a nickel.

To illustrate my point, let me give one of my experiences: In 1910 the ranchers were discouraged because the weather was hot and dry and feed was short. Many were selling out on this account, because they didn't have enough feed for the winter. It was a stampede. One of my neighbors wanted to sell.

I borrowed \$12,000 to buy him out, and in two years I sold \$32,000 worth of cattle and horses off that place, and still had his land. There is where my acquaintance with the banker helped me a whole lot, but more about that later.

At the age of twenty-one I came from Europe to the United States, and in a short time wound up in Yankton, South Dakota. Horace Greeley's advice to go West fitted my case, and I have never regretted the move.

A blacksmith by trade, I was unable to obtain work. Work was not plentiful, because grasshoppers and drought were putting in extra hard licks, and the people were poor. Being broke, I could not afford to wait for work; I went after it. It wasn't easy to find, and ranch hands were not getting \$50 and \$60 a month as they are now.

I even offered to work for my board and room, but was unable to obtain steady employment. Finally I got to going around doing odd jobs, and sawing and splitting wood. I got 75 cents a cord for this work, and figured that if I got enough wood to cut and split I would make money.

I landed in Yankton on September 25, 1876. I managed to live through that winter without going into debt, and the next spring went to work for a blacksmith at Scotland, South Dakota, at \$7 a month and board and room. I jumped at this chance to work, for it was an opportunity. It knocked and I was home to let it in.

A job was a job, even though I had to work from four in the morning until ten at night. I was pretty tired when I quit, and went to bed.

I saved a little money, and the next year I married, figuring two could live as cheaply as one. We did, and before long I bought the blacksmith shop for \$175. Not having the money, I gave my note; and in six months I paid it off.

From the blacksmith shop I took up a claim of 320 acres that a squatter had. After proving it up in six months, I paid the Government \$1.25 an acre, rather than live on it for five years. I started into cattle, slowly at first, but gradually increasing my herd. I was a hard worker, but when prosperity came I did not have the knack of holding on to the money. Several times I went through what in those days was a small fortune. Finally I settled down in

grew into a fast friendship, cemented by my borrowing more money of him. Our business dealings brought us in close touch, and Bob proved a great friend to me during my initial days in Montana.

I bought my pure-breds, and that fall I had enough steers and dry cows in the bunch of grade beef, which I sold. After returning from Chicago I went straight to the bank. I found Ford, and told him I had enough money to meet my note, but

him out I would have enough winter pasture for his and my stock. Nothing was said about the matter at the time. A few days later I was riding on the flats, and met him again. It was a dry, hot day, and brought to mind the fact that the winter was going to be a hard one on stock. We met up, and talked a bit.

"Wagner," he said, "I have the blues. I want to sell out, and I want you to buy me out."

I replied that I too would like to sell, and asked him to take my stuff.

"Well," he said, "you know I can't buy you out, but you can take my stuff."

"Price," I asked, "what do you want to sell?"

"I want to sell everything I own, put on my hat, and walk out. I want \$30 a head for the cattle, with calves thrown in, \$60 a head for my horses, and \$4,000 for the land, and all personal property thrown in."

I gave him a check for \$1,000 to bind the bargain. A week later I went to Bob Ford to borrow \$12,000 with which to pay off Price. Finding Bob sitting back of his desk in his private office, I breezed up to him.

"Bob," I said, "how do you feel; are you cranky or in good humor?"

"Why do you ask?" he replied.

"If you are cranky I don't want to borrow any money, but if you are in good humor I want \$12,000."

"What!" he exclaimed. "Have you bought again when everyone wants to sell?"

"Yes, I have. I am again going to listen to the advice of my father: when stock or anything is so high that everybody wants it, that's the time to let it alone; but when it is so low that nobody wants it, then that is the time to buy."

"You are making no mistake," he said, as he handed me the money. What I did on this deal you already know.

That advice my father gave me has always served in good stead. In 1912, however, I did follow the crowd, and was stung. Conditions were bad that year, and I was weak enough to sell my stock at \$50 a head, while my neighbors got only \$40 a head. After I sold I thought over the matter. What was I now going to do with my land. Two years later I bought in again at higher prices.

That was the biggest mistake I ever made, and it was through following the crowd. One winter my neighbor figured his range would not be good enough for his horses, so he moved them at the cost of \$15 to \$20 for wintering. In the spring they were so poor he could not move them back to his place. I stayed at home, and mine wintered fine.

Two years ago everyone figured horses were going to the bowwows. I thought of what my father had said, and stuck with mine. At the time I said horses would be worth a whole lot of money in four years, and still maintain that in 1921 they will be higher than we ever saw them. If I had range now I would buy 1,000 head of horses.

And here's another instance of how I won by going contrary to the road most men follow: In 1893, when no one wanted horses, I went into southern Iowa and bought seven carloads of good grade Percheron mares. I did not buy any that weighed less than 1,600 pounds, and they were good, clean, well-shaped mares. I paid from \$50 to \$90 per head for them, and they cost me an average of \$65 per head on the farms where I bought them. The same kind of mares are to-day bringing from \$175 to \$225 per head, yet farmers are now grumbling about low prices. They don't know what low prices are.

I shipped these mares to Tyndall, South Dakota, and sold them at approximately \$400 a pair. In nearly every case I had to take small horses in as part of the purchase price, but I got money enough to boot to pay the original cost of the big mares, leave me a good profit, and I had the plugs left over. I then shipped all these plugs up to the northwestern corner of the State, where the farmers lacked horses and money, and sold them on [CONTINUED ON PAGE 74]

"Never Follow the Crowd!"

SUMMED UP, this article, by an old Montana rancher who has made a big success, says simply this:

"The time to buy is when the average man is discouraged and wants to sell. And the time to sell is when the average man is excited and wants to buy."

This Western farmer, Peter Wagner, has found that pretty sound practice in his business. And there is a thought in it for every reader of FARM AND FIRESIDE to-day, to wit:

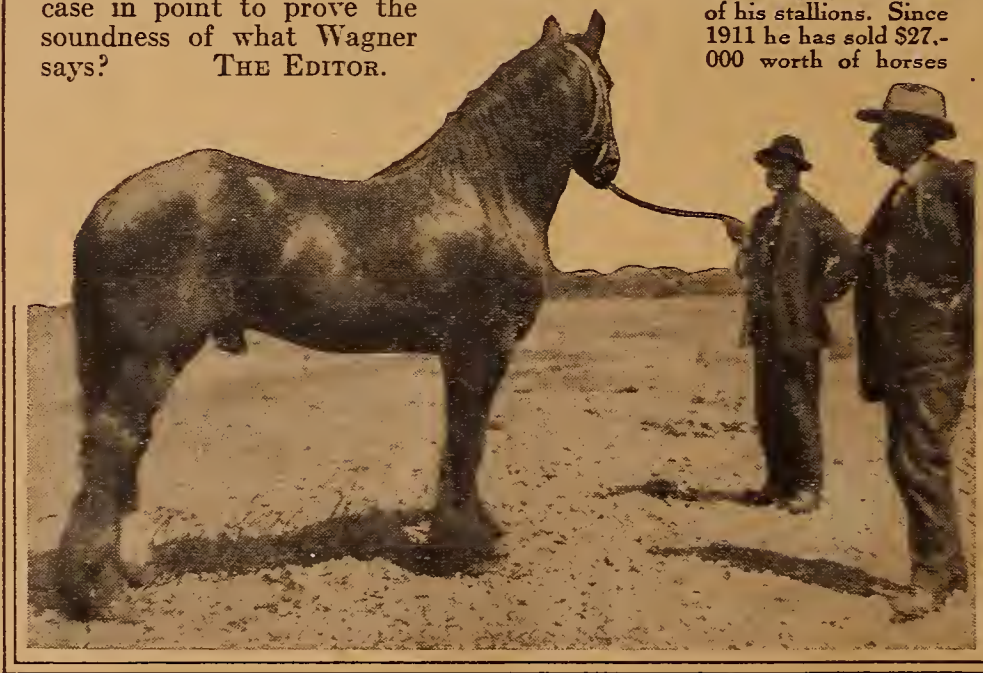
On page 5 of this issue is an article by William Johnson showing that thousands of American farmers are discouraged, and have decided to decrease their 1920 production. That means there may be a shortage of food with resulting high prices. If this shortage does result, and you produce this year to the limit of your ability, the law of supply and demand would seem to point toward a good profit to you.

Could there be a better case in point to prove the soundness of what Wagner says? THE EDITOR.



Alice Wagner, who lives on her father's ranch and takes great interest in the livestock business

Peter Wagner (on extreme right), with one of his stallions. Since 1911 he has sold \$27,000 worth of horses



earnest, and began to accumulate more stock.

Twenty years ago last April I quit South Dakota, and traded my land for a stock of merchandise which I sold for \$1,800. With this money and 36 head of "doggie" heifers I moved to West Butte, Montana, where I filed on a homestead.

Always a lover of good horses and cattle, I was not much in love with the stock I had, but with my limited capital and no credit I had to be satisfied with three pure-bred heifers, for which I paid \$150 each. These heifers had been bred, and dropped bull calves, which I used on the scrub stock I had.

The calves showed better breeding than the cows, and the blood in my grade stock improved. I could not operate as I wanted to, and I was longing for pure-bred stuff. Finally I got a letter from a merchant at Shelby, Montana, to Bob Ford, president of the Great Falls National Bank. With this introduction I met Bob Ford, and borrowed \$1,800 of him to buy pure-bred stock.

This introduction to Bob Ford soon

that if he didn't need it I would like to have it for another year.

After a talk, during which I told him of my plans and how I was situated, he extended the note for another year. After that I always borrowed to buy stock, but paid my notes when due. By virtue of the fact that I was always able to meet my notes, even though I would take the money home with me again, my credit was extended, and I could operate on a greater scale. Now, if I need it, I can borrow to the limit from my bank.

For eleven years I operated on credit. In 1910, a very dry year, of which I spoke of sometime back, people were discouraged. It was dry and cattle were cheap, and ranchers were anxious to get rid of their stock. I too had figured on selling out, but before I did I gave the matter thorough consideration, and decided not to follow the crowd. I knew that if many others quit producing there would be that much better market for what I produced.

One day while riding in the mountains I met my neighbor. He controlled a lot of government land, and I figured if I bought

My Hens, to Pay a Fair Profit, Must Lay Three Eggs Every Week

By B. F. W. Thorpe

Formerly Associate Editor of Farm and Fireside

NEVER since making friends with my first pen of pet Bantams have I turned my back on a hen. And those pet Bantams date back close to two score years ago. So my "adventure in chickens" is no recent affair. During that long stretch many breeds have made bids for public favor, for it must be counted an off year when some new variety—in feathering at least—does not bob up somewhere with strong claims of superiority.

Way back there in the eighties and nineties the "battle of the breeds" for first place was even keener than now. My experience and observation told me even then that every breed or variety of poultry is largely what its breeder and handler makes it. But in those days there were no official records of egg production, and egg stories were like fish stories, only restricted by the imaginative limitations of the poultry keepers. Then, as now, there were plenty of hens that never missed laying "an egg a day," but the bluff could not then be called by a challenge to try them out in a laying contest for a decision.

Some of the earlier favorites, now nearly lost in the shuffle, were too valuable to go out of fashion. After my boyish fancy for Bantams waned, I successively tried out Houdans, Black Spanish, Brahmas, Dorkings, Dominiques, Hamburgs, and others as they came knocking for public notice. My interest from the first was to get to the bottom of the requirements for heavy, uniform egg production, just as milk production in dairy cows was being developed.

So, to learn the ropes, I penned stock from one breeder making great claims, to compete with that from another, until most of the best known breeds and varieties had been tried out.

With the coming in of the Langshans and Orpingtons, there was renewed interest in the contention that heavy breeds could be "bred to lay" as well as the light-weight stock. But it was not until the "big trio" of "American-built" general-purpose breeds began to push their way to the front—the Rocks, Reds, and Wyandottes—that the fight for supremacy was on in earnest. This contest finally simmered down to the aforesaid American breeds against the Leghorns for commercial use. So keen was this contest that the "say-so" of the champions of the heavy and light stock was not enough, and there came a country-wide demand for official laying figures.

This want was filled by the poultry departments of the experiment stations. Now we have reports giving official records going back eight years that furnish the exact lay of over 20,000 hens for full-year periods. These records include all the best known and most popular breeds and varieties of chickens brought together to compete for egg-laying honors, from every part of this coun-

try and from foreign lands as well. Now when a poultryman is inclined to make loose talk of the super-laying quality of his stock, customers insist on being shown official year records from a laying contest.

Already this encouragement of exact scientific breeding for heavier laying is making wonderful progress. It is not too much to say that the hens of this country are now each bringing in annually, from eggs, a dollar above what would have been secured, as a direct result of testing stock used for breeders in laying contests.

To me the laying contests came as a big relief, after laboriously making my home tests of laying quality in an effort wisely to pick a winning breed. But before the official laying contests came to the rescue I had reached this conviction: Any breed or variety of pure-bred, vigorous stock, —light-weight or heavy-weight—can be developed to lay an equal number of eggs in a year. Now, after eight years of laying competitions, conducted by a half-dozen experiment stations, my early belief is justified.

After arriving at this far-reaching conclusion, nearly a dozen years ago, I felt that a right choice of chickens was merely a matter of deciding which sort appealed to me most. If breed, color, marking, slant of tail, type of comb, etc., do not affect egg production, then everyone can safely select stock that he admires most, whatever its breed or variety, and be able to get maximum choice. By the same token, the strain secured must have been bred, fed, and handled for the purpose of developing heavy laying, and already arrived at that goal. Fortunately, the buyer of foundation stock of most of the popular breeds can now get satisfactory proof that he is getting the laying quality that he pays for, if he will take pains to insist on being shown official records before purchasing.

Nearly ten years ago I settled on the Barred Plymouth Rock for my permanent stock. In the showroom or in farm flocks these birds looked good to me, and had various points of excellence to back up their good looks. Having been originated before the other varieties of the Rock family, I felt there was less likelihood of variation ("throwing sports") than is the case with stock formed mainly to secure special markings and colorings.

BUT getting heavy-laying stock of any breed or variety was then (a dozen years ago) very much of a gamble, and the best I could do was to take for foundation stock birds that "had won in many hotly contested exhibits." I found my beautifully marked foundation stock to be "a heavy-laying strain," as claimed, but the heavy production continued only about sixty days in the spring. During the balance of the year clucking, molting, and eating were the chief activities my new birds excelled in. Developing laying quality from such a beginning was too slow work.

Fortunately, a few years later, I found one experiment station that had been quietly building up laying quality in Barred Rocks by trap-nest selection of breeding stock for a number of years. From this stock I secured a hen that had completed her second year of laying. A careful record of her third laying year was kept, and her lay was 217 eggs. Her fourth year lay was also exceptionally good for a fourth year of production—179 eggs. Again in February of her fifth year, this remarkable old hen started her laying pace as in previous years, but accident befell her in March. However, her lay for a month was 24 eggs. Here was foundation stock to build on!

From a mating of the old hen and a cockerel of similar high-pedigreed stock from the same source, I was soon launched on a breeding program of my own. But I already had the beginning of a strain of sufficiently heavy production, should the birds hold true to their ancestry. If so,

my problem was to hold my strain up to the high level already attained.

From a hatch of twenty-three pullets—forty-seven cockerels included—I selected ten pullets for entry in the Third Annual Laying Contest conducted by the Missouri Poultry Experiment Station. When shipped to the contest, about half of the pullets were already laying at five and one-half months old. Only eight of the birds that were entered completed a full year of laying. Two met death by accident early in the race. The remaining eight scored an average of 194 eggs for the contest year. This was in nowise a remarkable lay; still, when the contest records were made public, I was encouraged to find my youngsters had outlaid all but eighty of the one thousand pullets entered in that contest.

More specifically stated, my pen of Barred Rocks had outlaid all other Plymouth Rocks, all Minors, all Anconas, all Langshans, all Orpingtons, nine out of ten pens of Rhode Island Reds, eleven out of thirteen pens of Wyandottes, and thirty-two out of the thirty-seven pens of Leghorns.

To say that those molting, ragged veterans, faded to almost ivory-white in shank and beak, were welcomed home at the close of the contest would be putting it mildly. I was proud to take off my hat to those descendants of the old hen that had laid right up to November without stopping to molt.

Nor is that the whole story of that hatch of twenty-three pullets. Of the thirteen left at home, eight were selected to be a check pen to measure up against those sent to the contest. I kept a careful record of the eggs laid by the check pen at home for the entire year period. The total lay of the eight pullets composing the check pen was 1,661 eggs, or an average of 207.9 eggs per pullet. Combining the records of the contest hens and those in the check pen at home gave an average of exactly 200 eggs from sixteen pullets selected from a hatch of twenty-three.

Of the sixteen tested, I found that ten had made records of respectively: 241, 232, 221, 221, 218, 214, 211, 207, and 193 eggs during the contest year of exactly 365 days. Then, following my breeding records further, I found that eight of the ten hens whose individual records are given above were daughters of my old foundation hen, whose lay in her third and fourth years totaled 396 eggs. Of the sixteen pullets tested, all but three were sired by the cockerel whose blood lines were distantly connected to the old foundation hen with which he was mated.

Before closing this breeding incident, there is one more important factor I want to notice dealing with the history of the pullets whose records have been given. We hear much about the necessity of free range for breeding stock, which all will agree is to be desired. Nevertheless, stock of high vigor can be raised and kept strong in vitality on very limited areas. The mother of the pullets whose records are given above had been confined with her pen mates in yards and house not exceeding eight square feet per hen for a full year before the chicks were hatched. But the breeding stock thus confined were compelled to scratch for hours daily for all the unground grains consumed.

Since then I have kept pens of breeding stock representing six successive generations similarly yarded, and have experienced no difficulty in keeping hatchability and livability of the resulting chick descendants well above 90 per cent. At the present time some of the hens in my Barred Rock breeding pens are vigorous living and laying examples of such close confinement after four full years since breaking out of the shell.

In this work of making over our laying stock, broodiness is quite sure to block our efforts. And if we ask those who have had

management of laying contests whether broody hens make high records, the answer is, "They occasionally do, but generally the non-broody hens furnish the high records." My own experience is that a limited number of hens having the broody trait strong in their make-up can be made to yield high egg records, if they are never allowed to remain on the nest. But the broody hen is steadily burning up food and flesh that should go into eggs.

Again referring back to my foundation Barred Rock hen in relation to this subject of broodiness, not once did she become inclined to remain on the nest during the period of twenty-seven months while in my possession. And of the many descendants carrying her blood that I have raised, a large percentage show only a hint of broodiness or are entirely non-broody. Those of her daughters and later descendants which show broodiness, seldom have more than one or two attacks during a laying year, and are so easily discouraged it is rare for one to remain with a clutch of eggs when changed to the hatching-room. From my experiences just described, and with other breeds earlier kept, I am encouraged to believe that non-sitting stock can be developed in the heavier breeds as well as in the smaller Mediterranean stocks now less subject to broodiness.

BEFORE leaving this subject of building up laying quality and overcoming hindrances to heavy production of eggs, I want to emphasize some lessons brought out by the laying contests since they were begun eight years ago: Facts and figures brought out in the annual reports issued by the contest officials show that among the thousands of poultry breeders who have entered hens for competition there are perhaps one hundred breeders who have continued to enter pens each succeeding year, or at least several pens, since the contests began. Examination of what the successive pens entered have done shows the ability of birds of any given stock to continue to inherit the trait of heavy laying. A big record for a single year is too often followed by a slump, thus denoting a falling off in vigor or a wrong combination of matings while a heavy-laying strain is being established.

But continued study of our laying-contest records and reports just as strongly proves that a considerable number of breeders of laying stock are holding the quality of heavy egg production in their birds from generation to generation. These, as a rule, have been content to "hasten slowly," and to hold the production of their stock bred for entry in the laying contests around the 200-egg mark, instead of making phenomenal layers with the sons of phenomenal layers, with the chances good for rapid deterioration of vitality by so doing.

Another eye-opener coming from a study of the reports of our laying contests is the gain being made by the heavier breeds in carrying off a larger proportion of the prizes. By looking [CONTINUED ON PAGE 56]



This is Mr. Thorpe



This is the daughter of the old hen that made the official record of 241 eggs in her pullet year in the Missouri Egg-Laying Contest. The picture was taken December 3d, at the close of the contest, when she was in full molt and while she was still on the laying job



My foundation hen (Barred Rock) at the end of her third laying year. Her record for the third year was 217 eggs, for the fourth year 179 eggs

"What My Wife Has Done to Help Me Succeed on the Farm"

Prize letters by readers of Farm and Fireside

First Prize

Winner: Ben N. Smith
Secretary Cooper County Shorthorn Breeders
Association
Bunceton, Missouri

IN BEGINNING our married life in the fall of 1916, my wife and I talked of how we could get a home, so we concluded that we would keep a good system of accounts and take an inventory each year, and she said she would help all she could with the accounts, and do all she could in other ways.

The second year we won second prize in the State Farm Management Contest—a \$500 prize offered by Longview Farms of Lees Summit, Missouri. And our labor income the past two years has been nearer five figures than three.

We found through our accounts that the grade cattle we were keeping were doing no more than paying for their feed, and I was inclined to the Herefords, but my wife insisted that we should get Shorthorns (for which this county is famous); and, too, the Shorthorn breeders were getting the money as the range buyers would come in each year and load out carloads of bulls.

The heifers too would sell well, so after a while I bought three cows at \$100 each, and their first calves more than paid for the cows, and now we have 30 head of registered cattle half of which are Scotch. They have paid their way, and last year they paid for their feed and left a labor income of over \$2,000.

Last year my wife said that we should buy the farm of 300 acres which we were renting, and we succeeded in landing it with a small payment.

Our next problem was help, as the single men we had were drafted. Our next step was to get a tenant house and get a married man, but the building funds were lacking. My wife said she would have a turkey crop that would pay for the house, and, to be exact, the material cost \$478, and her turkeys sold for \$473, lacking only \$5 in paying for the material in a four-room house and a concrete cellar. The building was done with the regular farm help and the assistance of a neighbor.

After paying for all the feed that her chickens and turkeys ate in 1918, she had a labor income of \$639, beside cooking for two hands and having a good garden. In the above no account was taken of the poultry and eggs that we used.

Since buying the farm we were offered a profit of \$15,000, and I thought it a good time to sell, but my wife said that we were satisfied here and making money, so what was the use of moving elsewhere and taking chances in other places? Last week the farm management demonstrator of the university was here, and offered to make our farm one of the four demonstration farms of the State.

Sixth Prize

Winner: J. E. B.
Alabama

I THINK if more farmers would talk things over with their wives they would all have better success. My wife helped me mainly by her suggestions—farm-paper ideas I called them—but I know her business judgment and intuition helped too.

Having bought 60 acres, cleared and fenced it, I let it to a man on shares without knowing anything about the man. I

thought he was doing all he could, and after a year and a half of farming I was disgusted, and he was ready to quit.

I was about to sell out for what the raw land cost me, or rent to another indifferent farmer who wanted "a chance at it," when my wife asked me to wait till I would see another man, who, for lack of capital, was renting land. I did so, and succeeded in getting him to go in with me to try it for a year. My wife's judgment proved sound there, as he is an excellent farmer, and has been with me the last three years, and under his management my farm has steadily increased in fertility and value.

My wife advised buying more land and making the dwelling more comfortable for the helpers, also building a large barn. Then she got me to get some pure-bred hogs. I have found Duroc-Jerseys best for the South, as she had already known from the farm journals. I got a pure-bred Angus bull to mate with my scrub cattle at her suggestion, and have succeeded in getting some very fine calves. She bought some pure-bred Rhode Island Red chickens and after raising a flock advertised the eggs in the farm journals, and in that way advertised my farm and brought me quite a few orders for seed and produce.

I had a small field near the house which was almost useless to me, but at my wife's suggestion I limed it and put in tile, and now it is the finest piece of land I have. I used to think there was nothing to the farm papers, but my wife changed my mind, and now she has me reading FARM AND FIRESIDE and others.

I believe I can truly attribute to the farm literature that my wife and I have a fine, fertile farm, nice stock, and good buildings.

Fourth Prize

Winner: A. V. Hammond
R. F. D. 3, Box 84, Humansville, Missouri

IN SELECTING a life partner I have always congratulated myself upon winning one whose characteristics were in contrast with my own.

I was "baching" on a rented ranch. I had no business training, and was by nature a bit shiftless and lazy. Everything was done in the easiest way. I had no place for anything, and therefore nothing was ever in place. Many valuable minutes were spent looking for things. No accounts were kept. Machinery was left in the open just where it was last used. I traveled unnecessary miles in doing chores. My cattle were as wild as buffaloes.

But, oh, my wife! Why, she was bright, hopeful, enthusiastic, and had that elusive quality called "pep." She was a thorough business woman, and began at once keeping accounts.

Following her suggestions, I rearranged the premises so I could do the chores in one half the time. When I asked for a missing hammer, for instance, she invariably replied with an innocent twinkle in her eye, "Look, dear, where you last used it." I took the hint and took care of things.

She made our "shack" as attractive as possible and I gradually came to spend my evenings at home, thus letting loose of some of my objectionable "pals." Meals were always served on time, and were always well prepared.

But it was in the dairy business that my wife specialized. We argued the question at breakfast, dinner and supper, and finally she persuaded me to "tame" one of my "buffalo" cows, and at least make butter for our own use.

When I took the first pound of butter to the store and was paid five cents above the market price because "it was so nice," I was proud of my wife. That pound of butter brought 15 cents.

We read farm papers, milked more cows, bought a separator, and in a very short time bought the rented ranch, and paid for it. We are still in the "dairy business" at which I scoffed some twenty years ago. We have bought another farm, and are continually adding to our little pile of comforts, and our bank savings are also piling up. My wife is the sole cause of what little success I have attained.

Seventh Prize

Winner: A. Y. Bayless
R. F. D., Box 29, Grand Chain, Illinois

I HAD a great desire when I was young to be a prosperous farmer, and as I went among the young people I tried to pick for a wife a girl whom I thought to be a real helpmate, and I think, if you follow these lines on down—you will think, as I do, that I succeeded.

When we were married nineteen years ago, I bought 20 acres of land, put up a small box house of two rooms and a hallway. The good wife had prepared most of the necessary things to make this house a comfortable little home during the summer before she became my wife in the autumn. We worked hard, and the next year we added 20 acres more to our farm.

As she had but little housework to do, she would help me with so many little things about the farm work that would have taken our dollars to have hired a person to help me do them. She raised a good number of chickens and turkeys, and sold butter from two cows she milked and cared for, and with the cash she bought things for the house.

We worked on and saved, and in a few more years I bought 40 acres more. Now we own a farm of 80 acres and have built a home of eight rooms, bath, and basement, and instead of her milking two cows she is milking six, and boards the school teacher seven months out of the year, still raises chickens and a splendid garden every summer. And as I have worked and bought stock and farming implements, she has rugs, dressers, piano, and everything to make a lovely home, and we together have installed an electric-light plant, water system, and furnace heat, and I give credit to the help of a good wife. We have two children.

I sit and think to myself of some men who work most of the time and never seem to get where they have anything ahead, and I have sometimes seen that in these cases it was the wife who was always demanding things and giving very little in return. On the other hand, the man must do his part. Both must work and save. We ought to stop and think and give our wives praise and lend them a helping hand oftener than we do.

Second Prize

Winner: W. T. Rawls
Deer Stand Farm
Point Caswell, North Carolina

BEFORE I was married, ten years ago, I farmed with my father, he doing the plowing and I the work. For the first year after I was married and tried farming by myself, I was at a complete loss. I needed a partner. I managed somehow that year, but was not very successful.

The next year I bought 100 acres of uncleared swamp land in the next county. I didn't have a penny to clear the land or to build a house. However, I rented a house and small farm near my uncleared land.

I never knew any people around me, nor did I try to know them; took no farm papers, did not know any of the county officers; I did not even know there was a county agent. I simply took no interest in anything that was progressive.

My plans were to keep renting the house and farm I was on, and at odd chances clear my land. Right here was where my wife came to my rescue. She urged me to mortgage part of my land and get money to clear some of it. I did this, and was successful. The next year she urged me to do the same thing, and I did. I had then made two very good crops, and paid the mortgage.

"Now," said my wife, "let's get into a house of our own." We made the effort, built a three-room house and moved into it the spring of the third year. My wife, baby, and I were a happy trio the first night we spent in our own house. We then were on a sure foundation. We began to take on new life and hope.

My wife began to get acquainted with her neighbors, and of course that caused me to meet the men-folks. She then urged me to have "work spells," and she would get the women to help her. This social part was fine for us both, and the help to me was wonderful. I had "new ground cuttings," "log pilings," and "corn shuckings." My land was then getting in fine shape for farming.

My wife subscribed for several farm papers, magazines, county papers, and a daily. At noon and at night she had the papers handy for me to read. At every chance she read and studied them herself. This caused us to discuss farm problems together. I soon saw that she was up on the job of farming. I began to lean on her for advice on many matters, realizing daily from whence came my help and inspiration. I had not been raised to believe that women had equal rights with men, but one day I surrendered and asked her to be my business partner.

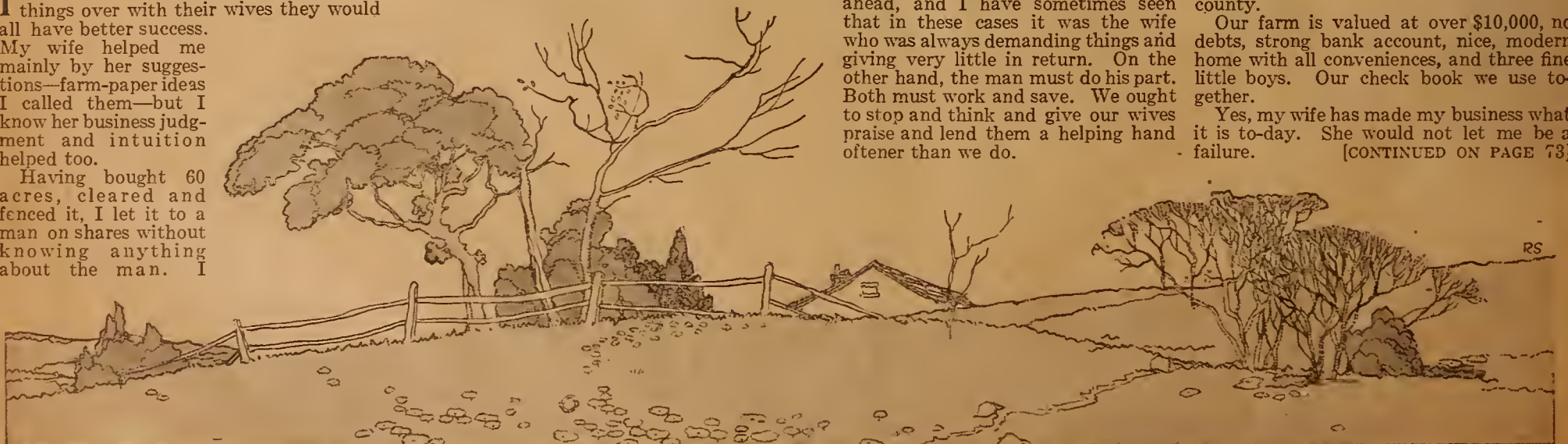
"Certainly," she replied, with her charming smile. "I would have been so from the first if you had asked me."

She took her stand then as my book-keeper and stenographer. She was wide awake on her job, too. She studied the advertising columns, got in touch with the county and home agents, and now we are, I hope, among the good farmers in our county.

Our farm is valued at over \$10,000, no debts, strong bank account, nice, modern home with all conveniences, and three fine little boys. Our check book we use together.

Yes, my wife has made my business what it is to-day. She would not let me be a failure.

[CONTINUED ON PAGE 73]



Five Things You Can Do to Keep Hog Cholera Off Your Farm

By Dr. T. P. White

Veterinary Inspector, Division of Hog Cholera Control, United States Department of Agriculture

HOG CHOLERA is like lightning—you never know where it is going to strike. The only safe way to protect your herd against it is to take every precaution you can against the disease.

Some hog raisers have taken chances with cholera and escaped with slight losses or none at all. But others have been almost completely ruined. It is this chance that no good farmer can afford to take with a crop that means so much to his pocket-book and his success.

The time, trouble, and money necessary to safeguard your herd is very small considering the safety it assures you. Your success in preventing cholera among your hogs depends on a few simple principles, carefully studied and followed.

Remember that there is no cure for cholera. Many cures and remedies are on the market, but none of them is as yet entitled to your confidence as a means of combating hog cholera. The only safe thing to do is to take measures of prevention. And here are the simple rules to follow in doing that:

1. Hog cholera is highly infectious. Keep posted on outbreaks, even though they are five or ten miles distant; and do not allow persons who have visited infected premises to come on your farm.

2. Remember that inoculation with serum or with virus is a valuable preventive but is not a cure. Therefore inoculate swine while they are still well.

3. Successful inoculation depends on pure, potent serum and virus properly administered. Incompetent or careless use of these products, or the use of an inferior quality, gives unreliable results, and may even do harm.

4. Maintenance of sanitary surroundings and adequate fencing to prevent swine from running at large are useful in preventing cholera losses.

5. The so-called hog cholera cures or remedies are not entitled to the confidence of the public as a means of combating hog cholera. Thus far, no medium has been found which will cure the disease.

I will discuss these so-called cures and remedies more fully later.

You never can tell where this disease will strike. This is proved by figures which the Department of Agriculture has collected in its work of combating hog cholera on a nation-wide scale.

During the year ending March 31, 1915, Iowa, for instance, suffered an estimated loss of 1,216,000 hogs from cholera, while the following year losses dropped to less than half a million. In Kansas, Oklahoma, North Carolina, and Georgia, on the other hand, the situation was just the reverse. When cholera was abating in Iowa it increased in those States. Other years show a similar fluctuation in the distribution of cholera losses in swine-growing States, but it is gratifying to know that the national total has grown steadily less since 1914.

That year more than 6,300,000 hogs died of cholera. In 1918 the loss was down to about 2,700,000, and figures for the fiscal year 1919 show that swine casualties from cholera are less than 2,600,000, the lowest since records have been kept.

The figures refer only to the number of hogs lost. From a business standpoint—I mean the monetary loss—the results are not so encouraging; the ravages of hog cholera during the last year have cost swine growers of the United States more than any year since 1915. In both 1916 and 1917 the total monetary loss from cholera was less than \$34,000,000. This year it is about \$57,000,000, due of course to the greatly increased value of hogs during those years.

These figures show that hog cholera has not ceased to be a menace, though the outbreaks for some time past have been less extensive than the violent epidemics of 1887, 1897, 1913, and 1914.

Back of the general principles stated above are many years of experimental and practical work by state and government agencies, and by good farmers. Serum that would protect hogs against cholera

was known as early as 1904. Armed with this new and modern weapon, the battle against hog cholera took definite shape, and in 1913, Congress having appropriated funds for that purpose, the Bureau of Animal Industry of the United States Department of Agriculture inaugurated a series of experiments in the field to determine the possibility of reducing losses from the disease, and to demonstrate the value of the preventive-serum treatment, as an immunizing agent against cholera, as well as in overcoming the disease in its early stages by increasing the size of the dose.

These services consist of personal visits to farms, holding autopsies, diagnosing disease, giving information regarding the treatment and disinfection of premises, and addressing meetings of farmers and others on the subject of hog-cholera prevention. In localities where practicing veterinarians are not available, demonstrations are given, and responsible laymen are trained in the work. Since establishing this intensive, systematic control of hog cholera, losses from the disease have been greatly diminished.

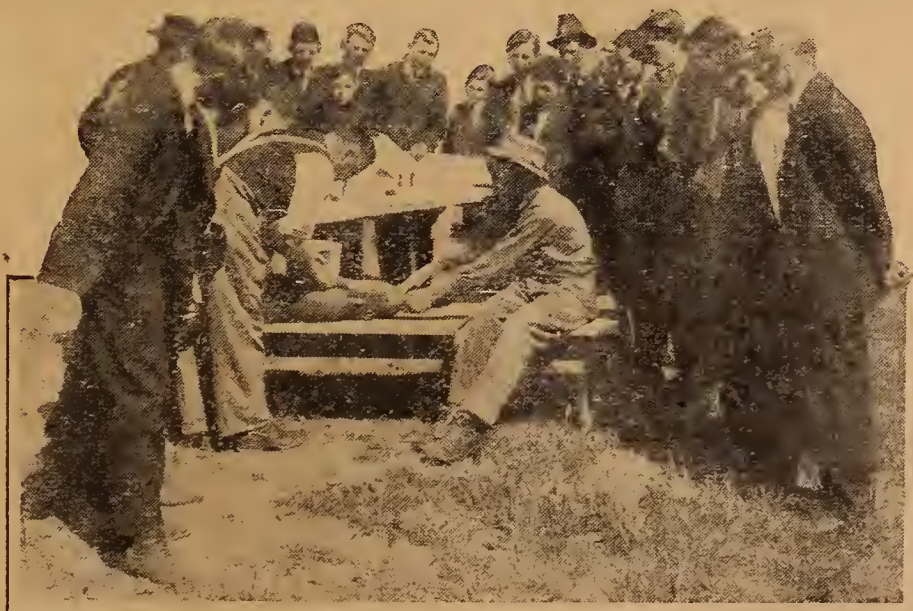
The necessity for a full co-operation from



W. B. Kinnick of Dallas County, Iowa, is a good hog farmer who believes in preventing cholera instead of taking chances. Here you see him standing beside his modern sanitary hog house. There would be much less hog cholera in the country if every farmer took simple precautions against it

In these demonstrations it was necessary, and is yet, to change the point of view of many swine raisers who had attempted to raise hogs in a haphazard way. The idea prevailed that the only requisite for hog-farming was a large wallow full of cozy mud, where the whole herd could live when not busy getting its feed in dirt and dust. Farmers now realize that hogs require just as much care and attention as other animals. The progressive swine owner now provides a shady grove instead of a wallow, feeds on a concrete platform, the herd gets good, clean food and water and sanitary sleeping quarters, all of which bring good returns for the time and money invested.

farmers in this government work can be clearly illustrated. For example, in a certain community there are fifty farmers, and cholera appears. Warning is given, and each swine owner is advised to keep his hogs at home and to have his herd treated at once. Forty-nine of them observe the common-sense instruction, but the fiftieth is a cantankerous individual who refuses to be governed by anything but his stubborn will. He will not restrict or isolate his sick hogs; he will not immunize them; he will not clean and disinfect his premises. Thus, unless he can be compelled by law to respect the rights and property of others he defeats the efforts of the forty-nine.



Here is a bunch of Illinois Pig Club boys watching a demonstration by a veterinary on how to inoculate against hog cholera. The work, you will notice, is done on a clean, elevated platform, not down on the ground as is commonly done

Following the experimental work and the urging of the importance of proper care, sanitation, and voluntary quarantine of and against infected farms, the Government's control work was extended until it now covers 34 States.

Under the present plan the Bureau of Animal Industry maintains a force of 135 qualified veterinarians to assist and co-operate with the state agricultural colleges and the live-stock authorities, such as state veterinarians, live-stock boards, and departments of agriculture, in the investigation and suppression of the disease.

Your big thought in raising hogs is to make and finish good, marketable animals. To this end your herd must be protected against disease, particularly hog cholera. It is just as important to have protection against cholera as to have insurance against fire. Anti-hog-cholera serum is now produced by many States, and distributed to farmers at cost of production. In the States where facilities are not provided, arrangements are made to maintain a supply of commercial serum at a central depot where it may be obtained without delay. In addition, many private firms have dis-

tributing agencies in all of the leading hog-raising States, so that there is available at all times an adequate amount to treat any number of hogs. The state institution producing or maintaining serum is either the experiment station of the agricultural college or some other state live-stock authority; or ask your county agent.

It is wise, if you can, to get a good veterinary, as a correct diagnosis of disease, if any exists, is an important factor in the final result. The serum is a preventive only, and should the animals suffer from other ailments, not only will the result be unsatisfactory, but valuable time and material will have been lost. A poor practitioner might use poor product, insufficient dosage, hasty and unclean application, lack of care following treatment, and produce poor results and probable loss of property.

Answers to Some Practical Questions

In the work of controlling hog cholera our field men are asked many questions regarding the inoculation of swine. The following are typical:

"Should feeder or stocker hogs be given the preventive treatment?"

"Will inoculation do any harm to breeding stock?"

"Which is better, the serum-alone treatment or the simultaneous method?"

These are questions in which hog raisers are especially interested, and I will tell you the answers that apply in most cases:

To protect hogs not ready for market, inoculate them when they are exposed to cholera, even though indirectly exposed. They should be inoculated if fed on city garbage, if cholera is in the neighborhood, or if any of the animals appear to have cholera. The importance of prompt treatment is shown by figures based on the inoculation of more than 200,000 swine. The percentage of loss was about four per cent when exposed hogs were treated before they became visibly sick. But approximately 29 per cent were lost when they were not treated until sick. This means that the danger of losing hogs is about one seventh as great when they are vaccinated promptly and while still apparently well.

When cholera threatens a herd that is about ready for market, and shipping facilities are favorable, some owners prefer to take the risk of shipping them subject to slaughter under federal inspection. However, thousands of cholera-sick hogs received at packing centers are converted into grease at an enormous loss to their owners. Inoculation at the proper time would have saved them. The treatment has no injurious effects on breeding stock—in fact, most of the best breeding swine in the United States are so protected. The more valuable the animal, as a rule, the more desirable inoculation becomes in order to render the animal immune.

Opinions on the value of the single and double treatment vary somewhat, but in general the double treatment is more widely used, because the effects are more lasting. The objection to the double treatment is based chiefly on the danger resulting from virus when it is misused. Proper administration of the treatment overcomes that objection.

Long before, and ever since the discovery of anti-hog-cholera serum, many so-called cures and preventive remedies for the disease have been on the market. Much money has been wasted by farmers in buying such preparations guaranteed as specifics, to find that they are composed of sand or charcoal as a base, with a few cheap drugs or chemicals which have no value whatever in preventing or curing cholera. Many of these remedies have been given thorough tests by state authorities, and found to be no good except in some cases as a general tonic.

More than sixty different proprietary remedies, compounds, and specifics for hog cholera have been investigated by the Department of Agriculture. The Food and Drugs Act provides for accurate labeling of these products, so that with a full understanding of the limitations of such remedies, and the [CONTINUED ON PAGE 38]

The Forgotten Farm of Abraham Lincoln

By Frank G. Moorhead

SEVEN miles out from Denison, Iowa, along a byroad which winds haphazardly among the hills, lies the forgotten farm of Abraham Lincoln. It is not a particularly good farm, as such things go in Iowa. The man who owns it is satisfied with 30 bushels of corn to the acre, he

the owner of 120 acres of Iowa farm land. The patent was signed by James Buchanan, whom Lincoln was so soon destined to succeed as President, dated September 10, 1860. It was authorized under an act of 1855, which gave to each soldier of the Black Hawk Indian War 120 acres of public

Few people, to-day, recall the fact that Abraham Lincoln and Jefferson Davis once served, side by side, as soldiers in the same army. With them was Zachary Taylor. The three Presidents were comrades in arms, Davis lieutenant, Lincoln a captain, Taylor a lieutenant colonel. Together they pursued Black Hawk, chief of the Sac and Fox Indians, when that intrepid old warrior defied the whites, avenged the desecrated homes and graves of his people, and violated the treaty which established the Mississippi River as the eastern boundary of the limited territory over which they might roam.

Abraham Lincoln was living at New Salem, Illinois, on the Sangamon River, near Springfield, when the crossing of the Mississippi River by Black Hawk called for the creation of a military force. He volunteered as a private, but was quickly elected captain. He found Jeff Davis and Zachary Taylor in the army of 2,400 volunteers and regulars which started out in pursuit of Black Hawk's band of less than 500 warriors, accompanied by their women and children. The war was brief. To what extent Lincoln participated in the fighting does not now appear.

The war ended with the rout of the Indians and the capture and imprisonment of Black Hawk. The whites lost about 200 killed, the Indians about 500. The cost to the Government was around \$2,000,000.

For his services in this war Captain Abraham Lincoln, under an act passed by Congress, filed upon 120 acres of land in Crawford County, Iowa, then part of the public lands of the nation. Whether Jeff Davis and Zachary Taylor filed in the same neighborhood does not appear, only the record of the Lincoln farm survives.

It is not on record that Abraham Lincoln ever set foot upon, or even saw, the farm which a grateful nation gave him.

Three miles to the south of the Lincoln farm lies the Lincoln Highway, traversing the country from New York to San Francisco. Alongside run the double tracks of one of the largest railroad companies of the Middle West, part of a great trans-continental system. Few of the many thousands of tourists who cross the country each summer on the Lincoln-highway—

following the red, white, and blue signs and the big L on the poles—realize they are passing so close to a place connected so intimately with the great President.

For that matter, few of the farmers who live in the vicinity to-day know where or what the Lincoln farm is. If you ask for the Peter Jepson farm you will find it much more easily.

Something like four years after Abraham Lincoln had been done to death in Ford's Theater, at Washington, a young German boy landed in New York City. That is, he called himself German-born, until the Great War. Thereafter, until the day of his death, he claimed Denmark as his native land. The fact is, he was born in Schleswig, shortly after it was wrested from Denmark by Prussia. It mattered little whence he came, however, he was American from the time he landed in New York until the day he died, just a few days before the American Army, with his own flesh and blood in it, began the big push which brought about the end of the war.

Those who knew Peter Jepson when he was a boy declare there was a strange coincidence in the fact that eventually he came to own the farm of Abraham Lincoln. Schleswig blood is far from slavish; it runs in the veins of brave men. There are no better citizens to-day in agricultural Iowa than men who came from Schleswig; their sons are ruling the land. Peter Jepson, coming into manhood, heard of America and Abraham Lincoln with a strange tugging at his heartstrings.

"He knew many of Lincoln's sayings by heart, and quoted them often," says one who knew Peter well in his early days.

Peter's own son, Jurgen Jepson, owner of the greater part of the Lincoln farm to-day, nods his head and adds: "Father was always proud that he owned the Lincoln farm. He told us boys to try and be like Lincoln, to be true Americans, no matter what happened."

By the time Peter Jepson had landed in America the Lincoln farm had passed by inheritance to Robert Todd Lincoln, in whose possession it remained until 1892.

The farm was kept intact until the death of Peter Jepson, in May, 1918. Then it passed to two of [CONTINUED ON PAGE 68]



The owners of the Abraham Lincoln farm—Peter Jepson to the left, and Jurgen Jepson to the right

might grow 60; he keeps only grade stock, though many of his neighbors have pure-breds.

The house has a decrepit, dejected appearance, which is far from inviting. Pigs bask in the sunshine by the side of the house. The grass is trampled, the barnyard serried with ruts. Yet this farm was the reward given a future President by a grateful nation, for valiant services in war.

In the office of the recorder of deeds of Crawford County, at Denison, in a musty old volume, is a record of the government patent by which Abraham Lincoln became

land. The Lincoln farm is officially described as the east one half of the northwest one quarter, and the northwest one quarter of the northwest one quarter, section 18, township 84, range 39.

The recorder of deeds at Denison proudly shows the entry in the musty old volume. Opposite the name of Lincoln, someone has written, in script of a bygone day, "Rail President-elect, for services Black Hawk War, captain." There's a story within a story, winding its way from one volume to another, just as the road to the farm winds its way from one hill to another.

Ways in Which You Are Apt to Lose Money When Weighing Hogs

By Burr B. Lincoln

Former Superintendent of Weights and Measures, Michigan

I OFTEN read and hear of people who complain of the large shrinkage of hogs on comparatively short hauls. I believe that this trouble may usually be traced to the scale itself or to the method of weighing. Four years' experience as a weights and measures official gave me much acquaintance with scales, and because of this I hope that I may be able to tell my brother farmer some things which may help him the next time he has pork, or anything else "wagon-weighted," to sell.

We will take it for granted that the scale itself is weighing correctly. Then one or both of these two things may happen: First, the team, in its uneasiness, may pull, making it necessary for the driver to keep a stiff hold on the lines. Such a circumstance will easily lighten the load from 20 to 50 pounds. Second, the team may back decidedly against the neck yoke, which will add from 10 to 50 pounds to the weight. There is just one thing to do to avoid these possibilities, which are really probabilities, and that is to unhook the tugs when weighing and make the team stand perfectly slack. Test your scales occasionally by driving a load from scale to scale and weighing with the horses unhitched. Scales should not vary over five pounds. I have run loads of more than three tons of sugar beets over two scales, and not have them vary over 2½ pounds.

When taking your hogs to market, see that the scales are balanced before weighing. Rain will add from 10 to 50 pounds of weight, according to the dryness of the

platform and the fall of rain. Then, in wet weather, mud will gather and be left on the scale, also adding to the weight. So it is always safe to ask for a new balance.

See that the scale does not bind anywhere—that no frozen mud, coal, or stone has become wedged between the platform and planks, a condition which will also lighten your weight.

The question is often raised as to what constitutes correct weight, or where the nose of the beam should come to rest—at the top of the trip loop or pin, or at the center of trip loop or pin. If it comes to rest at the top, you are accepting light weight, especially on a sluggish scale. The center of the trip loop indicates the proper weight.

Sensibility of Scales

In some scales you will find the sensibility very sluggish. By this is meant that the poise or weight indicator may be shoved ahead or back 20 to 30 pounds while the beam is traveling from one trip loop to the other. It is difficult to get within five or ten pounds correct weight on such a scale, and it should be adjusted. In Michigan the sensibility limit or tolerance is fixed at five pounds. If you can move the poise or weight indicator more than that while the beam is traveling between trip loops, you should demand the repair of that scale.

Hundreds of people are of the impression that a scale is correct if it balances. This is not necessarily true. A scale may bal-

ance perfectly and yet not weigh correctly within 300 pounds on a ton. This is because scales, however great, are built along certain mechanical lines, and there are a number of parts to get out of adjustment. A repair man should go over a heavily used scale at least once a year.

Then, again, there is the man who knows

This is Burr B. Lincoln and all the little Lincolns. This picture shows that hog scales are not the only kind of scales Mr. Lincoln knows how to run.



his scale is all right because he frequently tests it with a 50-pound iron weight. That scale may also be wrong, for two reasons: A 50-pound weight is not test enough. One is that the error in a scale may not show up until heavily loaded—at least a ton should be put on the scale, more if possible. Then put on 1,000 pounds of iron weights and notice

the error in the 1,000 pounds of weights.

Let us stop a moment and figure what some of these errors might total: A 40-pound scale error plus 5 pounds wrong balance, plus 15 pounds bind on platform, plus 40 pounds team error equals 100 pounds error. When pork is 15 cents a pound these errors would cost the seller

\$15. Surely, such a consideration justifies the farmer in looking over the scales which he uses.

One fall I tested over 300 wagon scales, and found 66 per cent of them wrong and in need of adjustment.

Where You Can Get the Money to Buy the Farm You Rent

By Earle W. Gage

Secretary-treasurer Ashville National Farm Loan Association, and editor and publisher of "The Farm Loan Monthly Magazine"

IF YOU rent your farm and would like to own it, but don't know where to get the money for the deal, you will be interested to know that we of the Ashville National Farm Loan Association have found a way in which this can be done.

I will tell you here the details of how we do it. Then, if you are interested, you can take up your own case with the farm loan association nearest to your farm, and see if its officers won't do the same for you.

If there is no farm loan association near you, and you have no county agent, write to the Editor of FARM AND FIRESIDE, 381 Fourth Avenue, New York City, and ask for the detailed plan by which the farmers of your neighborhood can organize a farm loan association of their own.

The beauty of our discovery is the fact that heretofore it has been thought that in order to borrow \$5,000 or \$10,000 from a farm loan association for thirty or more years, at four to five per cent it was necessary for you actually to own some farm land. We have found a way that you can borrow this money whether you own land or not. The only thing necessary is that you be a good farmer.

As secretary-treasurer of the Ashville Association it has been my pleasure to see several New York tenants become farm owners, who otherwise would have had to go on being renters. They did not have more than a few dollars in actual cash, their worldly possessions consisting of live stock, machinery, and general equipment, besides practical knowledge of farm practice.

After our officers became aware of the ease with which tenants, both share and cash renters, may become owners of farms with the aid of the Farm Loan System, they set out to finance the renters as fast as men worthy of aid presented themselves.

We were surprised to learn from a survey that of the 6,249 farms of the county, 1,135 were operated by tenants. This includes 122,990 acres of land of which 79,114 acres are listed as improved or tillable. The estimated value of this land was placed at \$5,721,895. This is one fifth of the value of all the farms in Chautauqua County, which shows that we have a ripe field for the practice of aiding farm tenants to become farm owners.

Chautauqua County is not overloaded with tenants, either; in fact, there are 2,500,000 of them in the United States, operating more than 250,000,000 acres of improved land, worth approximately \$12,000,000,000—which is another way of saying that the Federal Farm Loan System may prove the strong right hand in aiding thousands of tenants to become owners throughout the country.

In this county, as elsewhere, the cash and share renters are about equally divided, there being 531 of the former and 509 of the latter. There are 25 farming on the share-cash basis, and 70 not specified. Of these, 1,012 are native-born, only 123 being foreign-born whites.

On the basis of our experience with several tenants, this is the way we hope to aid tenants generally, who prove themselves worthy, to come into possession of the roof over their heads and the surrounding land. Since the Federal Farm Loan System promises the farmer a loan of 50 per cent of the land value, plus 20 per cent of the building value, the tenant makes application for a loan of about one half of the value of the farm.

Let us suppose, for example, that the farm he wishes to purchase is worth \$8,000.

He would make application for a loan of \$4,000. The man of whom he purchases would agree, provided he lacked the cash capital, to accept a second mortgage for the remainder, or \$4,000.

The terms of the federal farm loan mortgage, a first mortgage to run for a period of 35 years, are such that the holder of the second mortgage is fully secured. The tenant would be obliged to pay only \$65 per

accepting a second mortgage on the farm for \$4,000. This bears six per cent interest, with annual principal payment of \$1,200, or a total of \$1,440. To satisfy the federal farm loan mortgage, this man will pay each year, in semi-annual payments, \$227.50—a grand total of \$1,667.50 per year.

This tenant has a full line of farm implements, owns 20 head of grade cows, two teams, has practical farm experience, a good wife, and two willing sons. When our loan committee visited his farm and

is to be turned over to the federal land bank, there being no provision in the second mortgage regarding timber. But the fellow shows every desire to pay off his debts as fast as possible, and intends to turn his marketable timber to this end.

After this farmer had been operating the farm under this arrangement a year, I asked the general storekeeper nearest him if he had noted any difference in the man's business relations. He replied that as far as payment of obligations were concerned no difference had been noticed, since the man had always been a cash customer, promptly paying all accounts on the fifteenth of the month when he received his milk checks.

"But he and his family are better buyers this year than last," confided the storekeeper. "Only the other day he came in here and bought a power washing machine costing nearly \$100. He told me that he was on his feet now, and that he was going to make life as comfortable as possible for his wife. This was a marked contrast to the days when the fellow thought he was doing well if he could afford a washtub."

I decided that it makes a big difference to the business of the country in general whether you and your fellow farmers are working long hours a day, on some other man's farm, then giving him one half of the income, or whether you are working, possibly as many hours, and using all the money in getting ahead for yourself.

Suppose that our loan association were to take first mortgages on every one of the 1,135 farms of the county now rented. Since these show a possible value of \$5,721,895, let us assume that we finance these farms to the extent of 50 per cent each, or mortgages aggregating \$2,850,000. The Federal Farm Loan System will have just this amount of first mortgages, good as gold; this sum of money will be brought into our county and paid over to the present owners, who, let us suppose, accept second mortgages for the remainder, or about \$2,800,000. They will be receiving six per cent on this investment, and can then reinvest the money paid them on their farms to bear from four to seven per cent in solvent avenues.

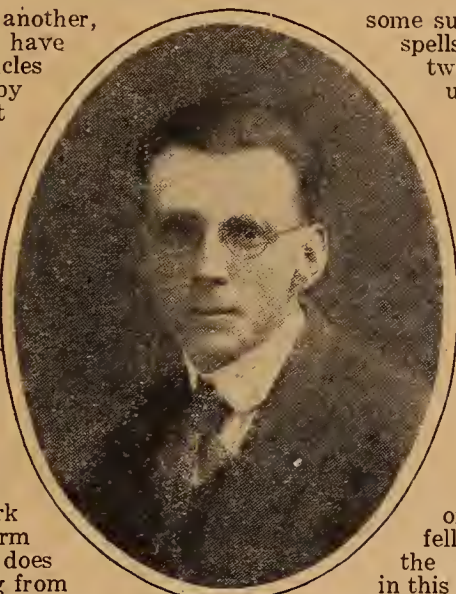
I am advised by the owners of several farms now rented that, after they have paid their share of taxes, insurance, upkeep, seed and fertilizer bills, they are not making to exceed three per cent on the investment. But under this arrangement they could, without any effort whatever, realize about five per cent on the investment. And the man who bought the farm would be going ahead, instead of backward or standing still.

I asked one of these retired farmers why he continued to hang on; why he did not sell his farm to the tenant? And he replied that the farm represented to him a lifetime of labor and worry, and that now, in his declining years, he depended upon it to maintain him and his family. After I had explained to him the better way of selling the farm to the tenant, a worthy, hard-working man, he saw the light. He actually went to the tenant and offered to sell the farm on this arrangement. The tenant and his family were delighted. Both families are now making more money. The former owner is enjoying a larger income, while the tenant will soon be able to pay for his farm out [CONTINUED ON PAGE 32]

What Does This Man's Work Mean to You?

ONE place and another, you probably have read a good many articles and short pieces by Earle Gage. But maybe you never have seen his picture before. We never had, either; and our curiosity got the best of us. We asked him for it, and here it is.

Gage is the kind of a man we like to deal with. He picks out the job he wants to do and then jumps in and does it with might and main. He happened to choose to work for the Federal Farm Loan—and how he does go after it! Judging from the volume of his output he must work for the association all day and write about it all night. But maybe not. Maybe he has a system whereby he can do twice the average day's work in half the average day's time. Most successful men, farmers as well as others, have worked out



Earle W. Gage

some such a plan. It often spells the difference between success and failure.

It is the first-class tenant farmer who has worked out such a time and labor saving system in his own farming for whom Gage suggests this plan of financial help—the tenant who knows how to make every lick count in the battle to produce better crops, and produce them faster and oftener than the other fellow. Nearly half of the six million farmers in this country are tenants, and a large percentage of these tenants are really good farmers, of the kind just mentioned. They ought to own their own farms, and here at last is a plan whereby they can without burying themselves forever under short-time loans of high interest rate.

THE EDITOR.

\$1,000 per year on the first mortgage, or a total of \$220, plus one per cent principal, or \$40, a total payment of \$260. Just as long as this payment is made no foreclosure need be worried about.

To the holder of the second mortgage could be paid simple interest, plus a reasonable principal sum. In order to do this, the tenant would not need to carry a financial burden beyond his ability to meet.

A concrete illustration of how this works out is the case of a local tenant who purchased the farm he had rented for four seasons: The farm consisted of 225 acres, of which 40 acres was good, marketable timber, the remainder being divided into good bottom-land pasture and meadows. The buildings were in fair condition, and the price asked for the farm was \$7,500. The tenant made application for a loan of \$3,700, which included \$3,500 cash, as part payment toward the farm, and his capital stock in the association, \$5 per \$100, or \$175.

The \$3,500 was paid over to the owner, who deeded the farm to the tenant, also

saw the method he followed in managing a rented farm, they were satisfied that he would be a first-class risk when owner of the same farm. His balance sheet showed that he had made a net annual earning of more than \$3,000 from dairy and surplus crops in the last two seasons. One half of this was paid over to the owner as his share, leaving \$1,500 for the tenant.

The committee thought that it was perfectly safe to assume that this man, working for himself, with the aid of three faithful helpers, could meet an obligation of \$1,667.50 out of a possible income of \$3,000; in fact, observation had taught them that a man working for himself is certain to show better results than when hampered under the usual restrictions characterizing tenant contracts.

It was estimated that the woodland, by merely clearing out the trees that should be cut to permit the second growth to develop, would show a net income, above cost of cutting, of approximately \$4,000. According to the terms of the Federal Farm Loan mortgage, one half of this sum

Drawn by E. W. Kemble



"G'wan, Mister Worm! Hump yerse'f like yer does, some time!"



"Dat's de way! Now I kin play crokay."



"Now fo' de stake, den out."



"Yes, honey. Out on a fowl."

"If There be Winter in Your Heart"

By Warren Wilmer Brown

THEY are back again—the snowdrops in my garden.

They are several weeks ahead of time this year, and if the robins hear of it, probably they will be jealous and hold an indignation meeting in their sunshiny Southern groves, pass resolutions of protest, and all that sort of ridiculous thing.

Whether or not the early appearance of the snowdrops portends the quick flight of winter is, of course, open to question.

But all the same, they are heralds of the spring, and as such they set the heart to singing.

What courageous cheerful little flowers they are, to be sure! No matter how despairful the day, no matter how the great overhanging elm may moan, may shriek in agony as its limbs, bare, black, and twisted fantastically by the torturing years, are torn by the winter gales.

It's all the same to the snowdrops. They smile as gayly as if it were May instead of February, toss their heads in a brisk, impudent courtesy, and then turn to continue their merry pranks with the wind.

They have been blooming in the same place for years, reviving always what precious memories of times that are gone, of eyes that shall brighten no more at sight of a flower, of little feet that trotted away into silence long ago!

Veritable spirit flowers they are, that know not the dread of snows and sleet. The icy breath of the northern winds only makes them dance the livelier.

They are born of the hope that sleeps below the surface of the frozen ground. Their roots spring from the course of the warm, globe-encircling flood of life—that current, mysterious, inexhaustible, eternally flowing, which disappears here and there, sinks from sight for a little while, only to burst forth into a world that, as its first wave plunges up from the depths and rolls onward, becomes a paradise of color, perfume, and melody.

These tiny flowers, brave and stanch as they are, for all their pallor and seeming fragility, are the forerunners of that transfiguration.

"Stop as you pass this way," intones a fairy voice, "and if your soul is not deaf, you may hear our song. It is a song of hope, always of hope.

"Pause a little to listen, and if there be winter in your heart,



Photo by Nathan R. Graves Co.

They are back again—the snowdrops in my garden

you may discover how a tiny flower can pierce its gloom and call forth other flowers in greeting."

The impulse that sets winging this song comes not from the menacing skies. It comes from afar, where Spring is patiently waiting her call.

Doubtless before Lady Flora shakes off her long sleep to scatter far and wide the violets and hyacinths she has gathered in her dreams, there will be long days of passionate tempest, days of bitter sorrow and disappointment. Heavy snows may yet cover these tender blossoms, and for weeks, perchance, they will not be seen.

But afterward, the warm suns, melting drifts, the twitter of birds here and there, and finally a day when Earth shall rise triumphantly and fling aside the garments of her death-like trance.

And the snowdrops will be there, scores of them where now there are only a modest few.

When they fade, as fade they must, will come the richer, more fragrant blossoms—the crocuses, the tulips, the jonquils, the hyacinths, the lilies that hold in their hearts the sweetness of cloistered vales, one panoply of color and fragrance after the other in rapturous, unbroken succession, until at length bursts summer in all its golden opulence.

So are flowers the symbol of the beautiful possessions treasured in one's innermost being, the memory of friends—alas, how quickly, oftentimes, friendship becomes a memory!—of well-loved music and poetry, of soul-stirring books and paintings, and—may it ever be—of a kind act now and then.

That many of the aspirations, the realizations, the reminiscences of life's springtime should vanish is inevitable, just as it is inevitable that the snowdrops must go. It is a sad certainty of our passing that this should be so. But as we halt, mute, appalled with wonder before the veil, so impenetrable, so portentous, that enfolds the future, we need not dismay.

Not if we have sown and gathered for the closing days of our little year. And when comes that season which is not short nor mutable, we shall fall into dreaming contentedly, gladly, knowing that what we have striven for and mayhap lost or gained, will pass into and become part of that mystic life current, enriching it for those who shall follow where we have been.

Rotations That Will Help Maintain the Fertility of Your Soil

By L. E. Call

Professor of Agronomy, Kansas State Agricultural College

WE HAD a letter from one of our very good subscribers out in Kansas the other day (Mr. G. A. Radefeld of Agra), asking for an article on problems of soil fertility in the Great Plains country. So we asked Mr. Call, also of Kansas, who is one of our corresponding editors, to give us this article, which is a digest of the same ideas he set forth in his talk before the International Farm Congress at Kansas City a little while ago. Soil fertility is of course the foundation stone on which good agriculture, progressive agriculture, profitable agriculture, stands. Without fertile soil we are unable to make a nickel. Hence we feel that Mr. Call's article, showing how we may take off great crops from the soil and still keep it fertile, is a really worth-while contribution. If there are any further questions you want to ask after you have read this article, write to Mr. Call, care of FARM AND FIRESIDE, and he will be glad to answer you.

THE EDITOR.

THOSE of us who have been making a living from the farm in the Great Plains have in the past been so interested in our climatic problems that we have failed properly to appreciate the importance of many of the other problems that confront us on the farm.

I do not wish to underestimate the importance of rain and the conservation of moisture in our farm operations, but we should not let this one large problem so obstruct our vision that we cannot see many other problems which, if not now, may become in the near future equally important.

The problem that I wish to discuss with you to-day is that of maintaining in their present productive state the soils of the Great Plains. Nature gave to the Great Plains an unusually fertile soil. Through long ages the native grasses and legumes growing upon the prairies have stored large quantities of readily available plant food.

Since these soils have been under cultivation their productivity has gradually decreased, because the supply of organic matter in which most of the easily available plant food is held has been destroyed by cultivation, and very little effort has been made to restore to the soil the loss thus sustained.

Our system of farming since the settlement of the Great Plains has been a system of taking from the soil all that it would give and returning almost nothing. As an example, the plant food removed from Kansas soil during the past fifty-five years in the wheat crop alone has been worth about \$700,000,000, or as much as the farmers of Kansas have received for all the wheat grown during the last six years.

As this wheat has been largely milled outside the State, and as the bran and shorts, as well as the flour, have been fed largely outside of Kansas, this fertility has nearly all been taken away. Even the wheat straw, worth more than \$12,000,000 for the plant food it contains, has been largely burned or otherwise wasted. Such a system of farm practice can result in only one thing; reduced productivity of the soil.

As would be expected, we find that the acre yield of the three most important farm crops of Kansas—wheat, corn, and oats—has decreased rapidly during the past fifty years. The average yield of wheat for the first twenty-five years of a fifty-year period was nearly 15 bushels to the acre, while for the last twenty-five years of this period the average yield has been but a little over 12, a reduction of more than 17 per cent in the yield of wheat.

The yield of corn has declined from 33½ to 20 bushels, or a reduction of over 40 per cent in the yield of corn, while the reduction in the yield of oats during this period of time has been 32 per cent. This reduction in yield has taken place regardless of the fact that the varieties of these crops grown during the last twenty-five years have been better adapted to the climate of the State than those grown during the first twenty-five years. This is also in spite of the fact that the soil has been much better tilled, and farming operations generally have been better done during the second period than during the first.

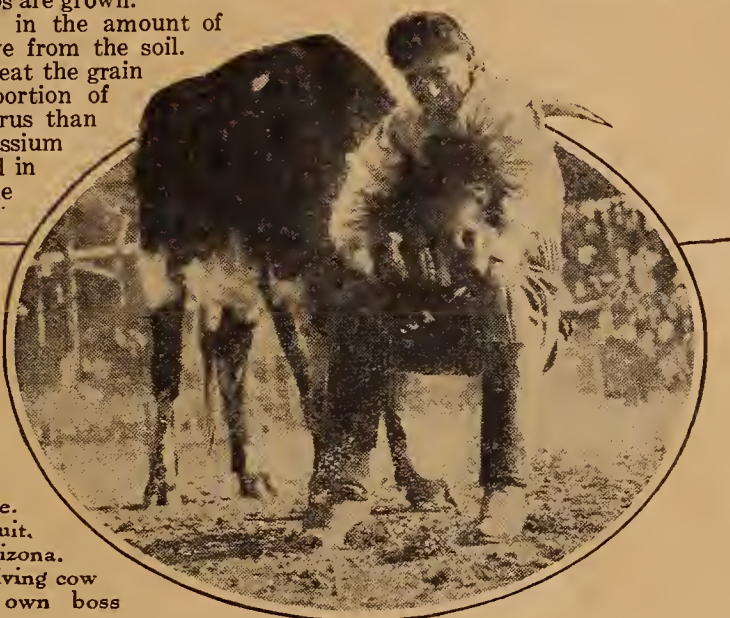
The causes largely responsible for decreased productivity are the following:

1. The removal of plant food by crops from the soil.
2. Erosion or washing away of the surface soil by rain.
3. Depletion of organic matter.
4. Lack of satisfactory crop rotations in which leguminous crops are grown.

Crops vary greatly in the amount of plant food they remove from the soil. In corn, oats, and wheat the grain removes a larger proportion of nitrogen and phosphorus than the straw, while potassium and calcium are found in greater amounts in the

straw in such a way that it may be returned to the soil. The same attention will be necessary in handling corn and other grain crops which are now sold and removed from Kansas farms in such large quantities.

In some parts of the Great Plains, especially on the rolling soils in the eastern portion of this area, tremendous quantities



As noted in our text, this is Wiley Hill, who used to ride fuzzy broncos for Buffalo Bill; but when Wiley went and called for his roll, Bill figured him out ten dollars in the hole. Whereupon Wiley quit, and returned to Arizona, where he has a thriving cow outfit, and is his own boss

"Bulldogging!"

"LA-A-ADIES an' gen'l'mun! The next event will be the Bulldoggin' Contest. Furst dogger, Wiley Hill!"

The heavy corral gate crashes open and a red steer charges forth. At a signal from the starter, Wiley Hill spurs his cow horse to the chase. Amid thunder of flying hoofs and clouds of gray dust, Wiley bears down on the madly racing steer. As the little horse sweeps past, our hero flops from his saddle right down on the horns of the galloping, plunging steer—and throws him bare-handed.

Is this at a Wild West show?—or at a movie studio? No. No, indeed, gentle readers, nay. This is just a bunch of our Out-West ranchers having a good time at the county fair.

FARM AND FIRESIDE reaches many Western homes where vast numbers of cattle are still handled on the open range in the good old-fashioned way; and, indeed, even yet there are stretches of public domain out there where you can ride straightaway for three days without seeing even a fence, and cowboys are just as handy with the rope and as graceful on the woolly bronchos as they ever were.

But to get back to bulldogging. It's easy. Hundreds of our Western subscribers do it. All you have to do is to ride up to your ox, reach over and grab him by the horns, then swing from your mount, attempting, meanwhile, to jam his nose into the ground. If you are successful, you greatly accelerate things, and dump your steer in short order.

However, if you can't throw him as you hit the ground, simply hang on until he stops running to fight, then twist his head upside down, drop over backward, with his head resting in your lap—and down he goes. Voila!

That's about all you need to study in order to learn bulldogging in your own home. However, to become a really accomplished dogger some actual field work is desirable.

ROMAINE H. LOWDERMILK,
Wickenburg, Arizona.

straw than in the grain. A 20-bushel wheat crop will remove from the soil in the grain and straw about 38 pounds of nitrogen, 6½ pounds of phosphorus, and 32 pounds of potassium.

Many people have the idea that hay crops do not exhaust soil fertility. This is a mistaken idea, for alfalfa and red clover use larger quantities of all the necessary elements of plant food. These crops, however, have the power of taking free nitrogen from the air, while in most other plants this element is taken from the soil; consequently, alfalfa and red clover may leave the soil richer in nitrogen than before these crops were planted.

However, if alfalfa and clover are sold instead of fed on the farm, the phosphorus and potassium which these plants take from the soil may be depleted even more rapidly by growing these crops than by growing the grain crops.

If we are to insure the productivity of the soils of the Great Plains in the years to come, it will be necessary for us to change our farm practices in such a way that a larger quantity of the by-products will be saved in the manure and returned to the soil.

It will also be necessary for us to give more thought to the proper utilization of

of plant food are washed away through erosion. On many of these soils the loss by this means has been much more rapid than the loss of fertility in any other way.

Since erosion is caused by running water, any practice which increases the water-holding power of the soil will decrease erosion. Adding organic matter to the soil, working the ground at right angles to the slope of the land, and deep plowing are all effective methods of checking the wash, and therefore assist in preventing erosion.

Steep slopes in a field should be cropped in grass or hay instead of cultivated crops. The grass furnishes a protection to the surface of the ground, while the roots bind the soil particles together and hold them in place.

If it is necessary to plow or list sloping fields, they should be worked parallel to the slope instead of up and down. Fields worked on the contour hold water for a longer time after rain, which in turn gives the soil greater opportunity to absorb it, thus decreasing erosion.

The importance of keeping the soil in the Great Plains well supplied with organic matter cannot be overemphasized. Soil depleted of organic matter absorbs water slowly, and will hold less water than a similar soil well supplied with this material.

A soil low in organic matter also runs together and crusts badly after rain. It bakes if worked a little wet, and plows up lumpy if plowed dry.

Organic matter is also the principal food of the bacteria that makes available the plant food from the soil. In fact, organic matter is so important that it may be safely said that practically all of the so-called depleted soils of the Great Plains are unproductive not so much because of the deficiency of plant food, but because with the low supply of organic matter present there is not sufficient plant food made available for the soil to give profitable yields.

The fact that the soil of the Great Plains has been rapidly depleted of organic matter where it has been continually under cultivation is clearly shown by the results of careful analyses of Kansas soils made by the Kansas Experiment Station. In Russell County it was found that a native buffalo pasture, plowed thirty years ago and cropped continuously to wheat for thirty years, lost during this period of time about 40 per cent of its organic matter.

This investigation also showed that the decrease in both organic matter and nitrogen was the most rapid where cultivated crops were grown continuously than where any kind of a rotation was used.

The supply of organic matter in the soils of the Great Plains can best be maintained by:

1. Increasing the number of animals on the farm, so that a larger proportion of rough feed can be fed and converted into manure, and the manure applied to the soil.

2. Using all forms of organic matter that cannot be utilized as feed, such as weeds, straw, cornstalks, and sorghum stover, on the cultivated land.

3. Growing as large an acreage as possible of those crops that add organic matter to the soil.

It is a mistaken idea that barnyard manure cannot be used safely in the Great Plains. In this section it is necessary to use manure with greater caution than in the more humid parts of the United States. It should be applied in small quantities at a time, and usually as a top-dressing, so that it will not interfere with the moisture supply of the crops. It may be applied on ground that is to be listed to corn or kafir, or it may be applied as a top-dressing on plowed ground, or in the fall and winter on winter wheat.

The manure should be applied with a manure spreader, setting the spreader to make just as light an application as possible. If wheat can be top-dressed in the fall or early winter, the manure serves as a protection to the wheat against blowing and severe freezing, acts as a mulch to prevent evaporation of moisture, and later when the manure is worked into the soil it adds plant food and increases the supply of organic matter, which enables the soil to hold more water.

Straw and stover used for feed and worked into manure are of so much greater value used in this way that as much as possible should be fed or used for bedding. Where it is not possible to follow this method, straw should be applied as a surface dressing on wheat during the winter, or as a top-dressing on corn or sorghum ground, at the rate not to exceed one to one and one-half tons to the acre.

Rotations That Will Help Maintain Fertility

Crops like cowpeas, rye, turnips, and sweet clover are sometimes grown to plow under for the purpose of adding organic matter to the soil. Where moisture is the limiting factor in crop production, it is not usually advisable to grow crops in this way because of the large amount of moisture they remove from the soil in their growth. In the Great Plains all other sources of organic matter should be utilized before growing crops specifically for this purpose.

One of the first essentials in the maintenance of fertility is the adoption of a good cropping system. [CONTINUED ON PAGE 74]

What I Learned About Myself While Building a Stone Gate Post

By Joseph E. Wing

THE question of why men do things that they know will make them unhappy is one of the most puzzling questions that afflicts mankind.

I do things and know not why. I do things that cause me sorrow. I do things that my reason and conscience tell me are wrong. I do things that are good, better than I knew I could do, and so do you.

I am a puzzle to myself, a mixture of good and evil, of strength and weakness. And what I am my reason and observation tells me all men are, with perhaps some few exceptions. We are all puzzles to ourselves. Our wives may understand us, but we can hardly lay claim to understanding ourselves.

Our simplest motives for action are self-preservative. We draw away from the fire when it scorches us, so does the worm. We scramble out of the water when we fall therein, so does the pig. We feel the drawing together of stomach walls and make search for food, so does the cow. These causes for action are in all creatures, but man, in addition to what belongs to the brute, has memory and inherited tradition. He has memories of long cold winters, of hungry times, causing him to gather together firewood, to gather together food.

Now we have a hint as to why we do things differently from the brutes. There has been developed within us a stronger trait of thrift. We love to gather things together.

This habit of getting things is all but universal among men. It is most developed in the white races that have lived long in lands where winter comes and where stores must be laid away. It is least developed in the negro and other southern races, whose ancestors have lived long in tropical countries where fruits ripen the year round.

This instinct is good. It is possessed by almost every man. Even the poor and thriftless desire things, the trouble is that through weakness somewhere in their natures they cannot accumulate them, or, having accumulated them, they cannot resist a desire prematurely to use them.

I have not found the poor men who came to me dressed in the only clothes they possessed less exacting than others when they named their expected wage, but more exacting. They have this primal impulse to accumulate, but it is made of no use to them through the abnormal development of appetites that destroy the fruits of their toil.

The millionaire who toils daily to amass yet greater riches is an example of that instinct, developed abnormally. He amasses wealth, though it only gives him care and pain; he amasses it though he can hardly tell why, but no doubt *pride* comes in to form a strong contributing factor in his case. He thinks much of what his friends will say of his success. Success, could no one know of it, would not count for much. We are quite alike in this respect. We involuntarily do things to affect others.

Doubtless our motives are often much mixed when we do things. There is in all of us some of the love of self, the desire of ease and freedom from pain or care. There is often some love of wife and child and desire to benefit them. There is some thought of what effect we are making upon our neighbors, and some little desire to help.

While I was thinking this article over, for example, I was busy making a pair of rough gate posts to go at the gateway into the lawn at our home. It occurred to me all at once, "Why do I do it? What are my motives?" Then I began to analyze them. First, it was clearly unnecessary to have stone gate posts. I was replacing one post that would have endured ten years yet with no repair. The other was probably good for nearly the same length of time. It took a lot of toil to gather the stones for these posts. Gravel had to be hauled, and cement bought, and thought given to the design, and much labor to accomplish them. Why, then, did I do it?

A hermit would not have done it, or if he had it would have been because he wished to impress others, or to leave behind him some monument to show that he had lived there. So it was clear that I was doing it

in part to impress others—and there came the puzzle, for I knew full well that few of my neighbors would approve of these rough-stone things. But then I remembered a few of my friends who loved natural things, and felt that they would approve. Then it became clear to me: I desired to influence the taste of others who would

a better and happier man for it. It is always a comfortable feeling to know that your neighbors are well and happy.

But there are other motives in those gate posts. First, I tried to build them so solidly that they would endure without repair for a century at least. I went to much trouble to imbed within them bars of iron

hammered it. It is an expression of his life, of the rugged honesty of the man at heart. I did not put that up through vanity altogether, for indeed I feared that men would laugh; but it seemed to me it was needed there to make the thing complete, and as I set it in place my mind ran ahead to happy days that we hope may come, when guests would arrive afoot or in carriage to make glad the house in the edge of the woods, and the lantern swinging there would be both a guiding ray and beacon light. So there was more of the instinct of the squirrel, the gathering together of material for pleasure in the distant future.

And then there is the impelling force that moves all of us, the dislike to die and be forgotten, the longing for some sort of life after death, if only the life of other men's memories, so that I thought as I laid the rocks and mixed the cement, "Some day men may say, 'Old Joe Wing made those posts away back in the last century. He owned this farm then. He planted these trees.'"

You see, friends, I am laying bare all my heart to you. I do it because I feel so sure of your understanding me, and I feel so sure, too, that we are all so very much alike that what one feels the others feel too, and I am seeking honestly for the reason why we do things.

Why do we do it? Habit comes in, and is a most powerful influence. Habit is much more than half of the reason why we do it. Let me illustrate: One day I set out on a journey. After I had seated myself in the car I remembered that I had an unopened letter in my pocket. I took it out, and, instead of opening it at once, began to watch the disappearance of the familiar fields of my native country. As I sat looking out of the window I all at once became conscious that my right hand was searching for something in my left breast pocket. I was astonished at this, and puzzled not a little to know what it was that I was unconsciously seeking. Finally it occurred to me what it was that that intelligent right hand of mine had sought. It was a little aluminum paper knife and letter opener that a few years before I had carried in that pocket. I had never carried it when at home, but in my traveling clothes. There was then a subconsciousness, a directing force, that took note of my needs, and without my attention directed my muscles and set them to doing the thing that they had often done before. The wonderful part of it was that what I thought I had forgotten the hand had remembered. Every day I see more and more of the effect of habit.

Did you ever think what it is that makes the great diversity of types of people in the world, and in our own village? It is largely habits fixed in them by early environment. Many a man is a good man because he has formed the habit of being kind and honest. Many a man is dirty and disagreeable because he has formed that habit. Now, I am talking in generalities. I want to get down to bed rock. Why do I do certain things? Because, having done them before, I am conscious of my power to do them. Suppose it is a bad thing that I do. The memory, the habit, of having done it before comes to me. Maybe it is a thing that I do as a result of sudden impulse, of passion. Maybe it is a deliberate act of wrongdoing. There is with me the most curious and hard-to-be-understood underlying directing force. There comes to me all at once the conviction—yes, the knowledge—that I will do a certain act. It is probably something that I don't wish to do, something that my conscience does not approve. I reason with myself. I say, "You are strong, you can do as you please in this matter, you can go as far as you please, and then turn away." So, often quite gayly, I dally with the temptation, saying to myself the reassuring words that deceive. But all along there is the inner consciousness that I am sure to end by doing the thing that will cause me remorse. After the act is done one wonders why, and feels sure that never again will he be so weak.

I feel that I know so much about temptation that I would like to warn every human soul, "Beware [CONTINUED ON PAGE 36]"



This is the gateway and the house at Woodland Farm

The Fear of Failure Makes Many a Man a Success

I ONCE knew a man who had a fairly good job, and did it very well. He heard one day that the boss was considering him for a much better one, and a much more difficult one. He at once began telling his friends that he didn't want that kind of a job, because it wouldn't develop him along the lines he wanted to develop himself.

The truth was that, deep down in his marrowbones, the man didn't want that job because he was afraid he couldn't handle it. And he camouflaged this fear by saying that he wasn't interested in it.

But the job was offered to him. And he took it, and made good. No one was more surprised than he was, though of course, after it was done, he pretended that he knew all along he could do it.

That man almost permitted his own fears to scare him out of a chance to get ahead. And how glad he was afterward that he hadn't! But here is the point:

Immediately he took the hard job, this man's secret fear that he *couldn't* make good was swallowed up in the horrible thought that his associates would look down on him if he *didn't* make good. That forced him to *try his best*, which is something that few of us do unless we know we *have to*. The solution of the problem is to *have a goal* that you are definitely committed to—a goal that *other people* expect to reach. Then the chances are you will reach it.

And don't forget that it is just as useful publicly to hang up a goal for yourself in farming as it is in any other line of business.

THE EDITOR.



pass that way, and cause them to like simple, natural things, and to see beauty in natural things.

So after all there was in me a desire to teach, to have others like the things that I like. Why I should feel that way I cannot yet fathom. It is a motive too deep for me to grasp. What does it matter to me whether my neighbor has artistic impulses and makes his handiwork express his artistic sense or not? Is it because I, in turn, must drive by my neighbor's house? It must be that. So after all that motive is all selfish in me—unless, perhaps, I feel that the neighbor, in learning to develop beauty about himself, should grow to love better his home and surroundings, and be

that would prevent them from cracking, to brace them beneath the soil so that they should never get awry, and in this *hidden goodness* of these posts I naturally take some pride. That was not done for show! For what, then? It bespeaks of old age coming on and dread of trouble and care. It is the prudence of one who dreads to see things tumbling down or getting awry. It is part of the longing for immortality, the longing to have things endure.

On the top of one of these posts is a simple iron standard, holding out an arm, on which a lantern can be hung. Sammy Robinson hammered out that standard and arm, and I prize it because it has in it the inherent goodness of the man who

Books We Have Read for You

A page whereon we will occasionally try to keep you informed about new books of all kinds that are worth reading

Edited by E. L. D. Seymour

Where the Workers Never Strike

"GO TO the ant, thou sluggard; consider her ways, and be wise," was the advice of one of the old philosophers. But in these days of strikes and industrial strife generally one might better say "Go to the bee," that little toiler who no more thinks of stopping while there is anything to be done for the good of its fellows and its little republic than of dropping its wings and taking up its abode in the ocean.

Imagine a community of 50,000 or 60,000 individuals, which, having left a comfortable, fully equipped home and some 42,000 tons of provisions behind, finds itself

in Dr. E. V. McCullom's *THE NEWER KNOWLEDGE OF NUTRITION* (The MacMillan Company, New York).

Among other things, Dr. McCullom has made a series of investigations which seem to prove that certain diseases which cause the death of thousands of persons in the United States every year might be cut down or entirely eliminated if milk and dairy products were added to the diet. Pellagra, that disease which is killing thousands of men, women and children in the South every year, for instance, is preventable by the use of milk, in Dr. McCullom's opinion.

This book cites many interesting instances of experiments made by doctors on pellagra patients throughout the South to see whether the disease actually was caused by faulty diet. Persons who had the disease in its first stages were put on a diet containing dairy products, and recovered. Cases where the disease was affecting certain members of the family stopped short and affected no one else in the family when dairy products were added to the family diet. Small animals which were fed on the same foods that pellagra-ridden communities ate developed symptoms of the disease.

"There can be no doubt," says Dr. McCullom, "that there is great lack of knowledge by the people generally as to the importance of milk and other dairy products in the diet. There is no substitute for milk, and its use should be distinctly increased instead of diminished, regardless of cost. . . . The value of milk cannot be estimated on the basis of its content of protein and energy. Even when measured by this standard it compares most favorably with other foods, but it has a value as a protective food, in improving the quality of the diet, which can be estimated only in terms of health and efficiency."

"Milk is just as necessary in the diet of the adult as in that of the growing child. . . . Milk is our greatest protective food."

Other Books Received

THE STORY OF MILK, by Johan D. Fredericksen. The MacMillan Company, New York. 188 pages. Fully illustrated. \$1.50. A compact, interestingly written, descriptive account of our most important food, including the source and the obtaining of the raw product, the making of its several derived foodstuffs—butter, cheese, ice cream, etc., and its use in cooking. The author, now the manager of Chr. Hansen's Laboratories, is a representative of the famous dairy country of Denmark.

WOOL, by Frank Ormerod. Henry Holt and Company, New York. 221 pages. Illustrated from photographs. \$1.60. A discussion of wool as an industrial staple; and the history and character of the wool-manufacturing business. Written by an Englishman, from an English point of view, but containing valuable information and suggestions for the practical wool grower and handler here or wherever else sheep are grown.

CONNIE MORGAN IN THE LUMBER CAMPS, by James B. Hendryx. G. P. Putnam's Sons, New York. \$1.50. A breezy novel for boys approaching the long-trouser stage, describing life in the Minnesota lumber camps, and permitting the youthful hero to outguess and outwit some unscrupulous employees.

MAETERLINCK'S DOGS, by Madame Georgette LeBlanc Maeterlinck. Dodd, Mead and Company, New York. Illustrated with sketches by the author. \$2.50. A series of quaint and descriptive sketches of the dozen or so dogs in which the famous Bohemian poet found special delight and companionship, and touching tributes to them. An interesting and clear-visioned study of dog characters.

regiments obeying the word of command, and will begin to climb the steep walls of the hive. The first bees to reach the dome will cling to it with the claws of their front legs; those behind will hang onto the ones in front of them, and the next the same, and so on to the end, till long chains have been made that serve as a sort of bridge for the crowd which is ever mounting and mounting. And by slow degrees these chains, as the number of bees which form them becomes greater and greater, become a kind of dense, three-cornered curtain. When the last of the bees has joined itself to this curtain that hangs in the darkness, all movement ceases in the hive, and for long hours this strange cluster will wait, in a stillness almost uncanny, for the mystery of wax to appear."

**THE CHILDREN'S LIFE OF THE BEE*, by Maurice Maeterlinck. Dodd, Mead and Company, New York. \$2. An edition of the author's original classic, in which the style is simplified to produce a delightful and informing nature book for the child.

Why We Need Milk

THERE is much valuable information for everyone, but even more of encouragement and inspiration for dairy farmers,

If You Love Your Dog, Don't Show Him

This picture came from Edgar A. Cohen of Alameda, California. You bet nobody had better do anything to make this old fellow suffer.

His mistress would fix them if they tried to. You can see that in her eye.



"A FOUR-DAY show is the most fearful thing a high-strung dog can go through—next to vivisection," says the professional collie man in Albert Payson Terhune's *LAD*. "A little one-day show, for about eight hours, is no special ordeal, especially if the dog's master stays near him all the time; but a four-day show is—*is Sheol!*"

And then he explains why: "You can't blame him. Why, just suppose *you* were brought to a strange place like this and chained into a cage, and were left there four days and nights while hundreds of other prisoners kept screaming and shouting and crying at the top of their lungs every minute of the time! And suppose about a hundred thousand people kept jostling past your cage, rubbing at you and pointing at you, and trying to feel your ears and mouth, and chirping at you to shake hands, would *you* feel very hungry or very chippy?"

And worst of all about such an ordeal is the separation from the master, who, in the case of a real dog, receives the adoration that can only be accorded a god, combined with the fullest and most human devotion

and true companionship. Fortunately the great majority of show dogs have never been given an opportunity to know such a relationship with one man, so this keenest of agonies is often spared them. In other words, they have "owners" but not "masters," and, as Mr. Terhune explains, there is all the difference in the world between those two terms. "Anybody with the price to buy a dog can be an 'owner,' but all the cash coined won't make a man a dog's 'master'—unless he's that sort of man."

In the relations between the average farmer and the dog race there is rarely any halfway point. Either he totally lacks understanding of what a dog can be of service, companionship and devotion, and consequently hates them all, or he is a real "master," with all the knowledge and appreciation that the enviable office holds.

**LAD—A DOG*, by Albert Payson Terhune. E. P. Dutton and Company, New York. \$2. A collection of true tales of a collie—"thoroughbred in body and soul"—enriched with sage observations and suggestions gained through the insight that comes to the worthy master of a worthy dog.

Champion of the Abused Appendix

"THE notion that the appendix is a useless 'relic' and the colon a handicap and a menace which should have been long ago left behind in the march of evolution is not in harmony with sound scientific principles," says Dr. J. H. Kellogg, in *THE ITINERARY OF A BREAKFAST*. "Nature is wise. Because the purpose of an organ is not understood, we should not feel at liberty to denounce it as cumbersome and dangerous." He explains that the appendix is now known to be a leading factor in the highly important lubricating system of the large intestine.

The unfortunate thing about all our marvelous inner mechanisms is that, until we so abuse them that they begin to "miss" and kick up ructions generally, we fail to realize fully what we owe them, or in fact what they do or how they do it. Think what respect we owe to that complicated collection of laboratories and factories that we call our alimentary canal, which, made by nature to do certain things with certain materials in an orderly way, is called upon to handle the weird concoctions that make up our modern diet! A system of organs that not only "carries on" in spite of these difficulties, but rises to such abnormal emergencies as the following, described by Dr. Kellogg:

"A stickpin was placed in the intestine of an animal, the point being directed downward. At once a series of most interesting movements began. As the point of the pin began to penetrate the wall of the intestines the tissues began to thicken, thus preventing an immediate puncture."

"At the same time, a fold of the intestine

pushed up beneath the head of the pin and pushed it over, so that in a short time the pin was completely reversed, the head being directed down stream in the intestine, along until it was expelled from the body. This wonderful action was seen to take place in an intestine even after all the nerves connecting the intestine with the brain had been severed."

**THE ITINERARY OF A BREAKFAST*, by J. H. Kellogg. Funk and Wagnalls Company, New York. \$1.60. A description of the human digestive system, its commonest troubles, with recommendations as to their remedy and prevention. A book worth reading, though perhaps a little overdrawn in some of its phases.

OPPORTUNITIES IN FARMING, by Edward Owen Dean (Harper & Brothers, New York. \$1), who concludes that "farming is a better business than some farmers think it to be, and poorer than some city persons think it to be," but who says that "there are marvelous opportunities to-day on the farm for the city man who has a genuine love for the soil, coupled with the physical strength and the temperament to persevere in the face of obstacles the beginner must expect at the start." But why, one wonders, specify the city men? What of the opportunities that await the farmers themselves, who are not beginners, and who have, or could have, all the other things he mentions? The idea strikes us that it is not whence he comes that matters, but that it is what the man is, and what he has in him, that counts.



Here's a row of milk-fed youngsters for you. No pellagra in this gang. And if you have ever seen the wan, spindling little babies of poor mothers who can't get milk for them, you know it is the milk that does the business, too.

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Freak Farmers

Photographs from J. R. Henderson



HERE is a sample of a "crop" grown on Ed Cawston's ostrich farm at South Pasadena, California. Of course, you understand that Ed doesn't grow them with ladies attached in every instance. No, it just happened that this lady wanted to try out the ostrich she was going to buy her feathers from, to see if she liked him. And she'll have to pay real money for the feathers, too. Cawston says each ostrich produces from \$100 to \$150 worth of plumes per season. Gosh, what a heap of money human vanity does cost!—doesn't it?

A. M. BARBEE has a terrapin farm in Georgia. They are sold, when grown, for soup. They require no housing, as some live stock does, because they carry their homes on their backs. When they want to let unwelcome visitors know they are not at home, all they have to do is pull in their heads. You can either take the hint or get a snappy welcome by intruding. The terrapin's general contour greatly resembles that of an overgrown cootie.



HERE we have three bears and a "pippin." They all belong to James Cavanaugh, bear farmer, of Colorado. The "pippin" is Miss Cavanaugh. Jim sells bear steak and bear's oil. He says bear steak is a lot better than beefsteak, but a little harder to get, because the average bear is more quarrelsome than the average beef about being slaughtered. He also says that the bears are very nice to the children, but forever quarreling among themselves. From which we take it that trouble is always bruin on the Cavanaugh farm.



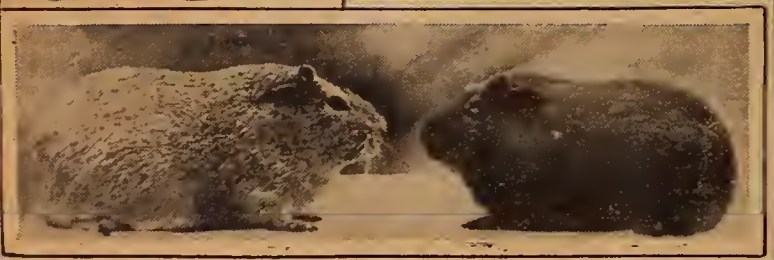
MAJOR GORDON W. LILLIE, better known as Pawnee Bill, has a farm of 10,000 acres near Pawnee, Oklahoma, entirely devoted to the raising of the cow's uncle, the buffalo. The buffalo is a very old-fashioned fellow. He insists on wearing a full beard, whereas the modern, up-to-date cow is smooth-shaven. But the buffalo's pride and dignity doesn't save him from the regulation cow fate. He is slaughtered and sold by Major Lillie, at \$1.50 a pound.



HERE you see Rose Ahearn on her rattlesnake farm in the Ozark Mountains. She raises diamond-backs for museums and circuses, keeping between 600 and 700 in the pits all the time and selling them for from \$5 to \$15 apiece. The runts are killed and rendered into oil, which sells for \$1 an ounce. Also the poison is extracted, dried, and sold at fancy prices. It is called crotalin, and is used in the treatment of nervous troubles. We're afraid we'd need a lot of it for our nerves if we had to stay around Rose's ranch much.



A GENTLEMAN named Matlack, father of the gentleman with the grin on his face whom you see here, owns what is said to be the largest guinea-pig farm in the world. These ambitious little brutes propagate at the rate of about a million a minute. They are born hungry, and continue that way all through life, which is very short if they have their way about it, for they eat themselves to death if let alone. They are used to try out new medicines the doctors can't get any human being to take.



AND this is a bumper crop on the alligator farm of H. J. Campbell in Arkansas. Campbell's motto is: "There, little alligator, don't you cry; you'll be a handbag by and by." Alligators, he says, are a perfectly safe crop so long as you keep them front-end-to. They fight with their tails, you know. One good wallop is all it takes from a 'gator's posterior appendage to knock you galley west. Killed by a waving tail! Wouldn't that be an ignominious death, though?



Could You Get More Profit From the Chickens on Your Farm?

By Victor G. Aubry

Corresponding Editor of Farm and Fireside and Extension Specialist in Poultry Husbandry, New Jersey Agricultural Experiment Station

I DON'T profess to know all there is to be known about the poultry business—not by a long shot. And if I am wrong in anything I say here, I hope you will correct me.

But I think I may have learned a few things in my years in the business in different parts of the United States and in Europe, both in my own experience and in studying the experience of others, and if I can point out some of the mistakes we are all apt to make, and which cut our profits from the farm flock, I think I owe it to you as a fellow poultryman to do it. So here goes:

In the first place, I don't think we realize how important is your little farm flock and mine. So let us look at the facts for a moment and find out where the millions of eggs and millions of pounds of poultry meat which are annually sold on our markets, come from. At first thought it looks as if the few eggs which you occasionally bring to the country store, usually in exchange for merchandise, is a mere nothing at all. We may also believe that the few broilers or friers or roasters, and even fowls that you sell now and again, amount to nothing when compared to the output of the big specialized commercial poultry farms. But when we realize that the few eggs and the few fowls or roasters that you sell are typical of hundreds of thousands of other farmers, we begin to realize what this means in the aggregate. This is borne out by statistics, because they tell us that the farm flocks furnish over 90 per cent of this produce, and that the specialized poultry keepers produce less than 10 per cent of the total each year.

Also, you use some poultry and eggs at home. We must not forget our breakfast of ham and eggs, and our Sunday chicken dinner. Also, what does your wife prepare for dinner when she has company? Why, nine times out of ten she goes to the old hen or her brood for a frier or roaster. The amount of poultry and eggs used in this way would be quite hard to get at with very accurate figures, but on an estimate it would probably mean from one tenth to one fifth of the farm flock output. This, in turn, is equal to from 10 to 15 per cent of the total amount of poultry products on our markets.

Closely kept records show us that the farm flock consumes from 10 to 15 per cent less purchased feed than does the flock which is kept confined in large houses or confined to small yards, as generally found on commercial poultry farms. This means less feed to be supplied in the way of mash and scratch. It means that the remaining 15 per cent is picked up by the farm hen on her daily rounds through the grain fields, around the barnyard, and under the feed bins and corncribs. Is this not also a very strong argument for the farm hen, because what would become of this feed were she not there to take care of it?

The farm flock usually occupies but little of the farmer's thought, as most often the women-folks care for it, and when the farmer does occupy himself with the flock it is only a few minutes a day, and then usually after everything else is done. In other words, the work of caring for the farm hen can hardly be calculated as it is usually done at odd times. Is this not enough to make a third argument in favor of the farm hen?

Also, let us not forget that hen manure is valuable on the farm. No barnyard manure begins to be as rich in plant food as is the hen manure. The average hen makes from 35 to 40 pounds of collectible manure on dropping boards yearly, besides that which is accumulated on the floor of the hen house in the litter. She helps also by cutting up the litter given her, to make this better as manure. At present prices of plant food this is not to be sneered at.

Now, I am sure you will agree with me that the farm flock is too often neglected; that the stock is often poor and of all ages and of many colors and varieties; that the houses are often damp, dirty, and poorly ventilated; that not much is done to help

the farm hen get a well-balanced ration. I am also sure that with very little added cost, and practically no added labor, but well-directed work, the income from the average farm flock could almost be doubled.

The fault of the stock in the average farm flock is usually twofold: First, it is of indifferent breeding, which naturally results in poor production of eggs and a lack of vitality, and, as a consequence, so often in poor hatches and a large loss in brooding. Second, it is the age of the average farm flock. We find pullets, yearlings, two-year-olds, and some five- or six-year-olds all running in the same flock. It is a well-established fact that a bird lays 20 per cent more eggs as a pullet than ever afterward, and that

fast as they stop laying. There are but few farm hens which should not be sold after two years of production, and replaced by pullets.

The farm hen gathers much of her feed, but that which she gathers in ranging is far from a balanced feed for the maximum egg production, or at least a production of ten dozen eggs yearly. The feed which she ranges for is almost identical to the scratch feed supplied by the specialized poultryman, as much whole corn, wheat, oats, etc., is picked up. For the best results of egg production this scratch feed should not be more than half the bird's ration. The hen would make almost her entire ration of scratch feed or whole grains if enough of this feed was given her, and in order to have her consume as much mash feed as scratch feed she should be restricted with the latter. This is where the farmer often makes a mistake in feeding his hens. Since

the supply of various grains which the farmer has on hand. Corn, wheat, oats, barley, and buckwheat can all be used. Rye, if fed at all, should never exceed five per cent of the total scratch feed.

The mash feed should be available to the flock at all times in a box, hopper, or self-feeder, and the farmer will find it much to his advantage to use large self-feeders for this mash, which he can fill once a week or two, and cut down on his labor, especially the daily chores, on the hens. This mash feed can be varied, but only with discretion, and the meat scrap or the animal feed should be kept constant.

Wheat bran	100 lbs.
Cornmeal	100 lbs.
Wheat middlings	100 lbs.
Ground oats (heavy)	100 lbs.
Meat scrap, high grade	100 lbs.

Hominy can replace cornmeal if cheaper, and ground barley can replace ground oats. Good hens will not get fat on this ration, and it should be available to them at all times. The table scraps may be utilized by mixing them each day with some of this mash and fed in a trough or box. Grit, oyster shell, and charcoal should be available in boxes or self-feeders within easy access to the hens.

There are a very few farm poultry houses which cannot be made into first-class poultry houses with a very little remodeling, and at a small cost. Usually a wooden, or better, a cement floor is needed, and ventilation provided for. This ventilation is best provided for by making an open-front type with muslin curtains and a small amount of glass sash. This, also, provides plenty of light and admits the sunlight.

Many farm flocks are paying well for the money invested in them, and the time taken to operate them. I am acquainted with many farm women who make all of their so-called pin-money with the income from the hens, and often pay for many other things necessary in the house. The following is a suggested possibility on the farm with 200 hens, and can be, and often is, beaten by farmers with their flocks.

MONEY REQUIRED

1 Multiple unit laying house, 20x40 feet	\$400.00
2 Colony houses, 10x12 feet, \$50 each	100.00
Fencing, posts, etc.	25.00
Equipment, including pails, hoppers, etc.	25.00
2 Brooder stoves, \$25 each	50.00
1 Incubator, 400-egg size	75.00
Supplies and incidentals	25.00
200 maturing pullets at \$2	400.00
Total	\$1,100.00

OPERATING EXPENSES

Feed purchased in addition to that picked off the range	\$500.00
Hatching eggs, 800 at 10c. each	80.00
Interest on investment	55.00
Depreciation, repairs, and insurance	85.00
To grow new pullets each year to take the place of the old ones which are disposed of—100 pullets at \$2	200.00
Total	\$920.00

RETURNS

2,000 Dozen eggs at 50c. a dozen	\$1,000.00
800 Hatching eggs at 10c. apiece	80.00
100 Fowls at 35c. a pound	140.00
300 Broilers at 50c. apiece	150.00
Returns from manure	100.00
Total	\$1,470.00

SUMMARY

Total returns	\$1,470.00
Total expenses	920.00
Difference	\$550.00

Many farm flocks are not as large as this, but the per bird net return of \$2.75 can be figured for 50 birds, or even 25. Some farmers are not able to get these prices, but in such cases the cost of feed should be materially lessened. The cost of installation can often be very materially reduced, as the farmer has already his house, which can be remodeled at a small cost.

The dominating factor in the returns possible is the egg production per bird, which is figured here at 120 eggs.



The boll weevil's greatest enemy

Three Mississippi Snowballs

READING from left to right, ladies and gentlemen, we have here, respectively, Sambo, Ephriam, and Jefferson Washington Jones. The shortest member having the longest name, to sort of even things up.

These three grinning Mississippians are sworn enemies of the boll weevil. They have, respectively, a hat-, a bucket-, and a sackful of them, which they have just snatched off the cotton crop next to this field of corn.

This trio is also exceedingly fond of food. As you can see, their mouths were specially made for watermelon.

It is youngsters like these that the extension work of the Southern States is taking in hand and training up to be real farmers of the new South.

THE EDITOR.

as the hen advances in years she consistently becomes a poorer producer. There are exceptions to this, but this is the average condition, and no doubt the farmer can increase his egg production considerably by doing nothing more than to simply kill off everything after it has gone through two years of production.

The farmer who has poor stock, if he will, instead of selling his own eggs each year, sell them for market eggs and take this money to buy hatching eggs from a pure-bred flock which has been well selected and carefully bred, will find that the cost of changing his stock has been insignificant, as usually he can get these eggs at a cent or two over the regular market price. It would at least not cost him more than \$5 extra per 100 hatching eggs to do this, and this extra \$5 would more than be offset, many times, by the increased number of chicks hatched. These well-bred flocks can be found in every locality, or at least can be located by the county farm agent or experiment station.

The birds hatched one year may be marked with one color band, and the birds of the next year with another color. This way the farmer will know the ages of his stock, and can begin to dispose of them accordingly after the middle of June, as

his hens are gathering quite a bit of their own scratch feed, he should cut down on the amount given very considerably, and quite a bit more than does the ordinary poultryman. The following schedule may help you determine how to feed.

DAILY SCRATCH FEED RATION PER 100 HENS ON THE FARM

Months	Lbs. per day per 100 birds	Lbs. for each feeding	A.M.	Noon	P.M.
November	8	2	2	4	
December	12	3	3	6	
January	12	3	3	6	
February	12	3	3	6	
March	10	2	2	6	
April	8	2	—	6	
May	8	2	—	6	
June	6	2	—	4	
July	4	2	—	2	
August	4	2	—	2	
September	4	2	—	2	
October	8	2	—	6	

These changes should be made gradually. By feeding scratch in this way the amount of mash feed consumed by the hens will be regulated. In the winter more scratch is given, because the farm hen does not gather so much ranging at this time and the production is not so heavy. The ration in this scratch may be varied to suit

"The Way We Made Over Our House"

Being the story and pictures awarded the first prize of \$50 in the Farm and Fireside House Contest for readers of the magazine

By Helen S. K. Willcox, Norwich, New York

IF WE FARM AND FIRESIDE folk only realized how lucky we are, how we often are envied by the poor yearning renter because many of us own and occupy rich-in-possibilities old dwellings built by the earlier settlers of this country, perhaps more of us would take greater pride and pleasure in restoring and improving the house we live in.

It was this kind of an ancestral house to which we returned a few years ago—a house sadly down at heel from many years of careless occupancy by tenants, yet possessing such good lines, such stanch, comfortable proportions, that we blessed anew the happy instinct which led us back to the family acres.

Our house, as shown in photographs, is a common, late Colonial type with a large long ell extending rearward on the west. Attached to the back of this was a rambling broken-down woodshed and ice-house such as one still encounters on many old-time farmhouses. The first thing we did was to do away with these useless and unsightly additions, and now their place is occupied by a lawn and my old-fashioned flower garden, flaunting and gay with fox-glove, Canterbury bells, four-o'clocks and all the rest.

It was at this stage of our plans that we decided to confine our limited means to the interior for the present, and let the "things that show from the road" go until our gasping purse had recovered from its first shock. If you could have peeked with me into the back part of our new home—the inconvenient, discouraged old ell—surely then we could not have been blamed for this rather selfish decision. The upright was almost livable enough for anyone—but that ell! We grimly "set to."

THE front of the house contained seven large pleasant rooms, consisting of living-room, big central hall, and parlor; up-stairs, large guestroom over parlor, long south bedroom hall, and smaller bedroom. Parlor, living-room, and guestroom each boasted fine fireplaces, and all we found to do here was to paint all the woodwork white, cover up the frenzied, figured wall-paper with plain, add home-made built-in bookcases in the west living-room's chimney alcoves, while the parlor received twin French doors on either side of the fireplace, where before there had unaccountably been no windows at all.

When a porch was added later, the doors for it were ready and waiting. The old floors, up-stairs and down, I painted gray-green, and hid their shortcomings under knitted and braided rugs. The effect, with our few heirlooms and old pieces, is far from bad, and cost little aside from careful planning and thought.

But the re-creation of the ell was another matter. We badly needed more bedrooms, and a bath was a necessity, so it was decided to raise the ell's roof, remove all partitions below, and make the whole over new. The big old kitchen, with its original fireplace and brick oven at the north end, plus a little bedroom and passageway, transformed themselves into a perfect dining-room, 16 by 24 feet—the loveliest room in the house.

The door beside the hearth, which had opened into the old woodshed, was replaced with a French one, and a charming "vista through," as Irvin Cobb says, was secured to my gay posy beds beyond. We papered this room in colorful chintz, laid a maple floor, finished the woodwork and stately paneled mantel in white enamel, spread the floor with the cheerful rag rugs, and draped the three west windows in prim Swiss. Kindly friends insist that there is no prettier dining-room anywhere than ours, but most big farmhouses could contrive one similar.

I had always harbored a theory that large, inconvenient kitchens ought to be abolished by law if weary farm women must be life prisoners in them, so I made full use of the opportunity to create my ideal of a little farm kitchen.

The milkroom was of no use to us, as we send our milk entirely to the shipping station, so this, with a big pantry and a closet, combined themselves into a space nearly 14 feet square. For three years we have baked and brewed therein, and, like those "scientific management" ladies one reads about, I can stand in the center of my handy workroom and almost touch range, sink, shelf, cabinet, or cupboards. In it we get hearty meals for twelve or more

the range, the refrigerator, oil range, wardrobe for men's outdoor clothes, and the washing machine. As we had no facilities for a basement laundry, it was incorporated into the annex by means of a big, low sink, back to back with its kitchen mate to save plumbing. Here the weekly wash is easily done, and the men also use the sink to "wash up" in. A latticed portico to match the porch covers the annex entrance, but does not show in the picture. We use

This last spring we turned our belated attention to the "things that show from the road" and added a 10 by 20-foot porch, home-made Dutch blinds, and several coats of Colonial yellow paint with all-white trim. The three aged, decaying locusts which shaded the front yard had to be laboriously dug up this summer, and in their places we shall set out young elms this fall. Of our other plans, more anon.

I suppose it is now time to get down to brass tacks and boldly confess our "carking costs," the unwilling climax to many a homemaker's happy dreams. To remodel the ell, up-stairs and down, the services of two carpenters were necessary for a month. At that time they received only \$3.50 a day and two meals. All rough timber, and much planed, came from our own wood lot, and made a vast difference in the total expenditures. The bathroom complete cost us nearly \$200, including hot-water front and tanks; a large, second-hand furnace, \$150. In all, the total improvements cost \$1,000 four years ago, not including our own lumber and occasional help.

The two French doors in the parlor cost \$18 additional, and the one in the dining-room \$15, all made to order. The porch this year cost \$150, not including our own tough lumber, local carpenters and painters receiving \$4 and \$4.50 per day. It cost us \$200 to paint the house—paint bought at a discount for \$3.85 a gallon. So far, then, we have paid out about \$1,400 on the house and have to show for it an improved exterior and rooms livable and convenient where once were dismal arrangements which Grandmother must have wanted to fight to her last working hour.

BUT we have barely started to make over our house. Next year a second porch will grow on the opposite end—the twin of the present one. The man of the house is going to make me green window boxes for all down-stairs windows at odd moments this winter, and these will be filled with glowing red geraniums. The up-stairs windows will receive their full quota of blinds at the same time. The driveway and lawn paths are to be graveled from our own gravel bed, and these are to be bordered with Japanese barberry, spiraea, and hydrangeas. The porches will hide their nakedness with wisteria, clematis, and trumpet vine, with a Dorothy Perkins rose or two for good measure.

The big barns, away at the rear, are also shining in new coats of pure white paint, and against them will gleam a brave array of hollyhocks, golden sunflowers, and creeping vines. In front of our winding fences along the public highway, still more coquetting hollyhocks will nod and beckon gayly, for I am now hastening to make up for lost time in having neglected too long the "things that show from the road."

Indeed, it is wonderful to spend one's self in making home out of a mere house, but I feel like calling out to every busy farm woman in America as I travel past her dwelling:

"Oh, dear lady, do take time to plant some friendly peonies and roses and hollyhocks in your yard, so that the other things your home lacks won't show so glaringly!" And that is just what I am doing now as fast as ever I can. I do so want the "things that show from the road" to look folksy and cared for, and cause every passing home-sick renter to exclaim:

"Oh, see that friendly, perfect old place! Let's buy a farm with a house on it like that one!" Then I will know that one pair of real farmers didn't "make over" in vain.

NOTE:—We are greatly pleased with the splendid response to the "How We Made Over Our House" contest, and the judges had quite a difficult task in selecting the winners. In succeeding issues we will publish the accounts submitted by the other winners. We are sure you will find a great many splendid suggestions in them.

THE EDITOR.



This is the old house just as we found it when we returned to the home acres, after it had been long abused and let run down at the heels by tenants over a long period of years. Most of the making-over was done on the inside, and we are only now getting our hand in on the exterior.

This is the same house after we had fixed the windows, added the porch, cleared the lawn, and completely made it over inside. To get a full understanding of all that has been done you must read the detailed letter.



helpers at silo and threshing time, and do it minus feet- or backache.

It was in the kitchen and the larger annex beyond that I had insisted theory should run rampant. The former was undeniably small—only four steps in any direction would get an ordinary meal. Next, the white enameled sink, to the terrible consternation of the plumber, was placed unusually high, and doing dishes is no longer a back-breaking task. The sink was placed where the light was strong, and beside it runs a wide, high work shelf with a row of sliding windows above and built-in cupboards beneath.

My kitchen is kalsomined in soft yellow, with white casings; all doors are of stained walnut. Old Sol finds it the first thing in the morning, and his cheerful beams certainly help to drive dull care away. Have your kitchen on the east if possible.

Other "theories" carried out here which have proved their worth was to locate the kitchen just in back of the front hall, so that I can hear and answer the clanging knocker instantly. Four doors open, respectively, into cellarway, dining-room, front hall, and annex. As for this latter room, made out of the ell's remaining pantries and closets, if you don't already own one, don't envy others, but insist on your own.

In the annex we store summer wood for

this room, nicely ceiled and finished, for a summer kitchen, while it also saves the first "tracking" from outdoors on the kitchen linoleum. We think it indispensable.

We were lucky in having pure spring water already piped to all buildings, and as the source is much higher than the house no difficulties were encountered in forcing water to the second floor for the bathroom. A small storage tank, three feet square, was placed over the bathroom, and this gives us a full tap everywhere. The bathroom was placed directly over the kitchen, so as to avoid extra plumbing, and for it we bought plain, guaranteed fixtures of enameled iron.

Cheap, ornate mail-order fixtures are never advisable, as they are rarely guaranteed, and local plumbers do not like to install them. Let several hardware concerns bid on your job, and take the cheapest and best. You then secure the best bargain possible.

Up-stairs, the raised roof to the old ell furnished us with three additional bedrooms and a large bath. All were left in natural, tinted plaster with white woodwork, and the original attic floors were painted and covered with more gay rugs. The bathroom alone had a new hard-wood floor. A home electric plant and oak floors from our own trees will be the next big items.

IN COMMENTING on their decision in favor of Mrs. Willcox as winner of the first prize, the judges of the contest said:

"Our decision was based on the fact that Mrs. Willcox had respect for the good points about the house as she originally found it; that she had a definite scheme in mind, and followed it out logically; that she made the place liveable, and is going to make it more livable."

Or, as Mrs. Willcox put it, she went at the job with the idea of "making this house over into a home." THE EDITOR.

The Tractor Salesman's Answers—And What I Learned From Them

By W. S. Andrews

I WAS strolling through the machinery section of one of the great Middle West fairs one day last fall, much interested in the exhibits of up-to-the-minute developments in farm-power and farm-machinery devices. As I neared one farm tractor tent I noticed quite a gathering of intelligent-looking farmers around a businesslike individual with a tractor exhibitor's button on. I came up just in time to hear the tractor man finish a discussion of the supremacy of the tractor over the horse by saying:

"I believe that in five years the only horses used on farms will be those used where a tractor won't work—for example, pulling logs out of a thick woods, or on such little jobs as need only a light team and then with the team resting most of the time. Yes, the horse has had his day, except as a pleasure animal, and in a few years you will see that I am right."

"I've been using a tractor successfully for three years now," spoke up a keen-eyed farmer, "but I still have horses, and always expect to have. I have sold a couple of teams, that's true, but I find that while the tractor is most economical for plowing, fitting ground, and the like, there are a lot of other jobs that a horse is much handier for, and cheaper too. No, brother, I don't agree with you on that point. Horses will always be used in farming, and I'm gambling on it to the extent of buying a pair of full-blooded Percheron mares to replace an old team of grades. The horse business is not on the slide at all. There will always be a good demand for big work horses of the right sort."

"You don't need to sell me on the tractor idea," spoke up a little countryman with chin whiskers. "The trouble with me and most of us farmers is that there are so many tractors that we don't know which one to pick. One agent swears that the four-wheeled type is best, and another vows that in another year the tank type will have all the others backed off the map, and along comes Mr. Two-wheeler with a handy rig that certainly looks good. I'll swear it certainly is a hard job to make up your mind."

"Yes, it is hard," the salesman laughed. "But my company happens to make all three types, so I believe I am a pretty reliable and unprejudiced person to get advice from. My first advice would be that there is a place for all of these types, depending upon the type of farm you are on and the kind of work you expect to do. If your ground packs easily I would want the tank type. If you don't have to worry so much about that, and expect to travel the roads a good deal I would want the four-wheeler. If you want a good compact outfit that will work good with a cultivator, mower, or harvester, I believe I would pick the two-wheeler. Then, of course, the size of your farm counts for a good deal too. Maybe a tractor that will only pull two bottoms is big enough, or you may need one of the larger outfits. Quality counts a lot too. Shoddy materials and poor workmanship are dear at any price."

"I agree with you there," broke in a lad of about twenty-one, who looked more like a college boy than a farmer, if you didn't notice his coat of tan and calloused hands. "The first tractor Dad and I bought was a dandy, we thought, till we broke some gears, and in getting them repaired found that they and a lot of the other hard-worked parts were made of nothing but cast iron. You can bet we are going to look inside the tractor we get next spring, and we know just the kind of materials to buy and not to buy."

"I'd like to ask another question," spoke up the whiskered farmer. "Why, in Sam Hill, do so many manufacturers put such blamed hard seats on their tractors? I never realized there were so many short-legged men in the world until I started riding tractors. Is there some unwritten law against putting a comfortable seat on a tractor?"

"No, there isn't," the tractor man grinned. "But a lot of manufacturers forget about it half the time. We did ourselves at first, but now I don't believe you would ever get a cramp or a tired back from

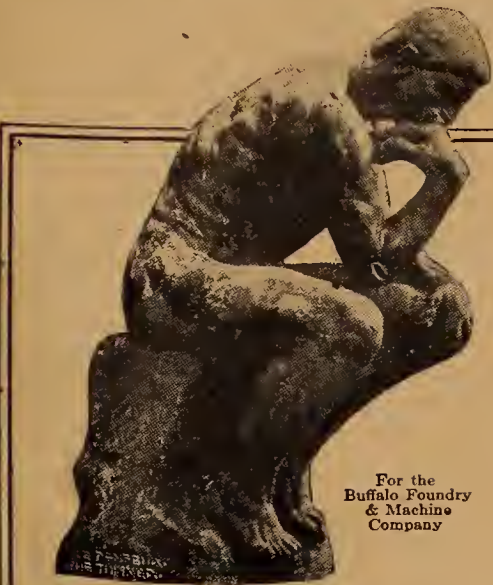
riding any of our machines. Notice that we have sunshades on all our machines now. That helps a lot in hot weather."

"The first tractor we had," another man said, "we liked because it was so accessible. But we found that the gears got all gummed up with dirt and sand, and wore out very rapidly. The next one we bought was fully protected from dirt and grit, but it took a week to get inside the blasted thing. Isn't

and cams and wheels that they look more like a plumber's job than an engineer's. But the grist of competition is fast weeding out that kind of machine, and clean-cut lines and simplicity of design are more common now. Look at our Locopull there. Isn't that a good-looking job? Just as good as it looks, too."

As I moved away I wished that every reader of FARM AND FIRESIDE had been there to hear this discussion, for I felt that some of the biggest problems of tractor design and operation had been touched.

Another tractor agent I found emphasize



For the
Buffalo Foundry
& Machine
Company

"The Thinker"

THE drudge may fret and tinker,
Or labor with dusty blows;
But back of him stands the thinker,
The clear-eyed man who knows;
For into each plow or saber,
Each piece and part and whole,
Must go the brains of labor,
Which gives the work a soul.

Berton Braley.

AUGUSTE RODIN, the sculptor, was one of the most wonderful sons of France. Personally he was an enormous man as to bulk, wearing a full beard, and with a manner rough to the point of being abrupt.

But beneath it all he carried a heart boundless in its bigness, and a mind keen and penetrating as the point of a needle. He started in the world as a poor man's son, having neither wealth nor reputation. Every step forward he made he had to work hard to attain, just as perhaps has been your experience in farming. His first piece of sculpture that he thought well enough of to want to exhibit was the head of a hideous old man which Rodin entitled, "The Man With the Broken Nose." It was a really fine piece of work, but it was so different from anything anyone had ever done before that the Academy would not exhibit it.

But Rodin knew he was right. He knew he was doing good work. He had faith in himself, just as any man in any line of business must have—as you must have in farming—to accomplish anything worth while. He had studied and worked. He *knew* what he was doing, and he knew that he knew. And after a time his work was recognized.

In "The Thinker," which we consider Rodin's masterpiece, he has epitomized in stone the thought which we believe actuated him in all he did—namely, that in the brain of every thinking man lies the first move in every step forward that the human race has taken in civilization, in art and music, in manufacturing and transportation, in farming, and in all the myriad of other activities in which we human beings indulge. To us, "The Thinker" is an inspiration, and we print this picture of it in the hope that it may be the same to you.

THE EDITOR.



Photo from
Brown Bros.

Auguste
Rodin

there such a thing as accessibility with reasonable protection from grit?"

"Well, it is a little hard to get both. But the machines turned out now are much better in that respect than the earlier models," the salesman replied. "You've got to remember that the tractor industry is going through the same process of evolution that the automobile industry went through. You all remember the first cars made, which steered with a stick and which you had to take off the seat to get at the engine. Well, you can expect the same thing with tractors until the different theories have been tried out and standardization of the different types comes about. Too many manufacturers have been building tractors on the old farm machinery idea. They are so cluttered up with rods

and the value of service. His company guaranteed their machine for a reasonable period after delivery, and promised full instruction in operating and caring for it.

"If you don't get service with your tractor purchase you are getting cheated," he said. "You've got as much right to expect service from your tractor dealer as from the man who sells you your car. We don't just merely sell you a tractor, but we also teach you how to get all the good out of it the manufacturer has put into it."

Which brought to my mind a statement which a noted engineer made at a banquet of the Society of Automotive Engineers.

"It wasn't until we adopted the policy of service after purchase that we really began to make progress with our farm lighting outfit. The automobile men all came to it, and you tractor men will have to too."

AS I left the field I got to thinking over what those men had been doing. Discussing farm power, weren't they? And here it was, on all sides of me—busy trucks plying back and forth, run by gas engines; puffing tractors eagerly lapping up their sectors, run by gas engines; parked automobiles which had brought the farmers to the show, run by gas engines; exhibits of power washers, farm lighting outfits, power churns, power feed grinders, all run by gas engines.

I couldn't help thinking how much we owe, as farmers, to the gas engine. And I couldn't help wondering whether we are taking full advantage of the possibilities it offers, on farms both little and big, for better farming, easier farming, labor-saving, bigger production, food-saving, less field and household drudgery for you and your wife, bigger profits, more comforts, better farm homes, and better country living.

The gas-engine-operated tractor is just one phase of gas-engine utility on our farms. Just look back over the past and see how the gas engine has helped us more and more.

First of all came the stationary engines that ran our pumps, feed grinders, hay balers, and bucksaws. Later the power was applied to drive wheels, and made possible the plowing outfit, cultivator, and the giant thrasher-harvester outfits of the West. The motor truck is saving both men and horses, with its greater carrying capacity and increased speed, and various power jobs have been made possible in the farm home by the perfection of the gasoline-drive electric light plant. The adjustments caused by the adaptation of engine farming have been so gradual as to be hardly noticed, but their influence has been great nevertheless.

And yet, in spite of the hundreds of thousands of farm power outfits that are in use all over the United States, I could not help but think of the farmers I know who have yet to discover the uses for them on their farms. There's no farm, big or little, East, West, North, or South, but what can profitably make some use of power. There's no farmer who cannot find work that an engine or motor will do cheaper, easier, or better. No matter whether you are a land baron or a humble renter, there is some job that gasoline or electricity would do to better advantage than you can do it by hand. And when it comes to the things that too many people consider luxuries—running water, better lights, motor-driven washing machines, churns, sewing machines, and so on—you will find they will pay too; perhaps not in bankable profits, but certainly with the best kind of dividends, the kind that swells your heart a little with pride, adds a few years to the good wife's life and makes her feel more like staying on the farm instead of going to town to educate the children. And the children, when their education is finished, won't be so apt to seek the crowded but convenient city. Yes, you and I have a use for power on our farms, and probably you will find a good many more of them once we get started.

Power farming has indeed revolutionized agriculture, although the change has been so gradual that it has hardly been noticed. But if all the farm-power outfits were taken away from American farmers, production would suffer very seriously. How seriously no one can say, but it would certainly be felt all over the world. I recently visited a fruit farmer in the Middle West. Farm power enables him to handle his 130-acre farm, of which about one third is in fruit, with one regular man in addition to his own labor. Of course, he has to have more help in rush seasons.

The mechanical assistants which make this possible include a motor truck, which he uses to haul his apples to market, a power sprayer; an engine pump which fills his spray tanks and has an automatic device which shuts [CONTINUED ON PAGE 68]

How About a Community House Instead of a Plain Monument for Your Soldier Boys?

THE returned farmer soldier boys near Argonia, Kansas, don't suffer from "that lonesome feeling" since the Dixon Township Community House has been built for them. This house, built in 1916 at a cost of \$5,000, has been in full working operation for three years. It was put up by the folks of the community, as a useful memorial to the boys who will never return. Many communities are putting up such buildings, and yours can do it too, if it likes.

In the reading-room the boys find not only books to suit their taste, but also should Mother wish a book on cookery or Father want facts about the corn borer, this library will give them the data.

After the chores are done, the boys may go to the auditorium, where a movie, an entertainment, or the annual stock show will make an otherwise stupid evening pass pleasantly.

This community house also brings the town and rural schools together, as the building is used in connection with all forms of school work, the country schools taking part in various events and displays that take place in town.

Butler, Pennsylvania, is also ready with its community house, which has been in working operation since April, 1917. At the weekly luncheon, the ex-fighter may hear an out-of-town speaker on some topic of interest.

The idea of this community building is to make a convenient and pleasant place for

people who live out of town to come in to Butler, so a clubroom has been established for the farmers. Here the latest farm books and papers may be found, as well as elaborate exhibitions on subjects which are of interest. Near this room is a checkroom where the out-of-towner may leave his bundles free of charge while he or she goes shopping, and should they wish, they may

transacted they may sit in the comfortable clubroom to eat and talk with their friends who come from other districts.

Comfortable washrooms for both men and women are also a feature of this service. The matron in charge of the woman's restroom sees that couches and little beds for the children are kept scrupulously clean so that the tired mother and the still more

These entertainments tend to attract the farmer to town, and also help the town dweller to be more interested in his neighbor living outside the city.

Some of your boys have not come home. A Dobbin and Bess in your neighborhood will never again hear the voice of their driver who marched proudly away to camp. He has given his life that the world community might be saved from an oppressor, that democracy might live. And you in turn want to perpetuate the memory of this lad who gave. He helped his fellow men to his fullest capacity, therefore the tribute you give his memory should carry on the spirit of service where he laid it down.

The memorial community house, dignified yet friendly in its real aspect, designed to meet the civic and social needs of your community, will survive not only as a memorial to those who died, but will give to all the feeling of helpfulness that makes the world a better place to live in.

You may be in doubt as to what sort of a building is best suited to your needs, you may want to know how to finance the project, or how to equip your stage, or perhaps the kitchen range is a source of worry. If you have any questions to ask, the War Camp Community Service, Bureau of Memorial Buildings, at 124 East Twenty-eighth Street, New York City, will be glad to answer them.

HELEN PAGE.



This is one of the children's dancing classes at the Matinecock, Long Island, Memorial House, at Locust Valley. The class is being chaperoned by the Locust Valley matrons

have the purchases delivered to the community house.

The shoppers from the country may bring their lunches, leaving them at the "house." After the business of the day is

tired baby may have a little rest before starting on their journey home.

Townspeople as well as the country-folk gather in the auditorium of this house, where events of interest are often held.

you have any questions to ask, the War Camp Community Service, Bureau of Memorial Buildings, at 124 East Twenty-eighth Street, New York City, will be glad to answer them.

The Way We Harvested Ice on Our Farm—and How You Can Do the Same on Yours

By Frederick W. Ives

Corresponding Editor, Farm and Fireside

IF YOU have access to a stream or pond of sufficient size and depth to cut ice, this article may be of interest to you. Others may be interested in storing ice artificially made.

Depth of water is of as much importance as area, since the ice is best that does not have sticks, leaves, or pebbles in it.

We used to cut and pack our ice as early in January as possible, before snow had frozen to the surface and made the top ice spongy, or before alternate freezing and thawing had caused air pockets. Also, it is better not to let the ice get too thick, as it is hard to handle satisfactorily.

The ice was cut in blocks from 18 to 22 inches square. When the ice was 12 inches thick, each cake would weigh about 125 pounds. A hole was chopped in the ice to start, and to guide the saw a 16-foot plank was used as a straight edge.

A common cross-cut saw with one handle removed, and which was set to cut wide, was generally used. A regular ice saw is a little easier to handle, and somewhat cheaper in first cost. Hand sawing was a necessity on small areas, but the ice plow was always used when we cut ice on the mill pond. An ice plow will soon pay for itself when used as a community proposition.

Two men can work to good advantage in sawing and getting the ice out. A pointed bar is used in breaking the cakes apart. Two pair of tongs and one or two ice hooks are necessary for efficient handling and holding of the ice. When several farmers go together, it pays to build a platform of plank for loading. The ice is then pulled up on this platform by one or two horses, thus saving much heavy lifting. The cost of cutting and loading will ordinarily run from 25c to 50c a ton where a considerable amount is harvested.

The quantity of ice necessary varies with conditions of location, amount of milk or cream to be cooled, amount of ice used for household refrigeration and other purposes. Generally we may say that, allowing for waste, 1,000 pounds of ice will cool the cream from one cow for one season, or

2,500 pounds of ice will cool the whole milk. Thus, for a 20-cow dairy from 10 to 25 tons of ice would be necessary. To this add two tons for household use.

The average farm icehouse is very wasteful, the loss running often as high as one half of the total. One farmer of my acquaintance built an icehouse

This could be had in a dimension of ten feet square by six feet deep. Allowing one foot for packing sawdust on each side and end, the inside dimensions would then be 12 feet square and 10 feet high for working comfort. Dry sawdust, plane shavings, or chaff may be used for packing ice next to the walls and over the top.



Ice-harvesting in Illinois. You see them towing the big cakes to be split into sections before going into the icehouse

and spent a great deal of money constructing triple walls, yet in the middle of August seldom had any ice. An inspection showed that a drain was needed. After it was installed he had no further trouble.

Air spaces due to poor packing, lack of ventilation above the ice, poor floor drainage or drains that admit air, insufficient insulation, burrowing rats and mice, and poor, spongy ice are responsible for an empty icehouse early in the season.

Forty cubic feet of space is required for packing one ton. Thus, a 15-ton icehouse would require 600 cubic feet of space for ice.

Between the layers and blocks we have had the best success by using wet snow. If this is done on a cold day the whole mass will freeze into practically a solid block. The snow will allow the blocks to be easily broken apart when the ice is taken out.

Ventilation over the ice, or at least under the roof, is necessary, as in the summer months the sun beating down on the roof raises the temperature above the ice to a point considerably above that of the outside air. The ventilator will prevent this accumulation of heated air, and thus prevent much loss.

A good floor drain that will not admit air is a necessity where the soil is non-porous, or where a concrete floor is used. A simple drain for ordinary purposes consists of a string of common drain tile laid about six inches below the floor line. The trench should be filled around and above the tile with cinders or gravel.

For insulation, double walls are usually built, the spaces between being filled with dry shavings. Dry material has much better insulating qualities than wet. To prevent rats from burrowing in the insulation, the shavings may be treated with corrosive sublimate previous to being placed in the wall. If the inner wall is lined with water-proof felt, the life of the insulation will be increased, as well as furnishing a good additional insulation.

Where an extra good storage house is wanted with refrigeration facilities in one end, the structure may be built up of hollow tile or concrete blocks. These are then lined with a three-inch layer of cork board, which is in turn protected with a good coat of cement plaster. This type of construction is very economical of ice. Its only disadvantage lies in its high first cost.

As for site, a sheltered spot should be chosen where the sun's rays will strike a minimum number of hours each day. A large tree or building will afford a great deal of protection. Farmers' Bulletin 523, U. S. Department of Agriculture, contains plans for several types of small ice-houses ranging from inexpensive to rather elaborate in construction. The bulletin also contains valuable hints on the use of ice, particularly on the dairy farm.

Where streams or ponds are not available, the making of ice in shallow pans has been used to some extent. It is most successful where rather long periods of steady zero weather may be expected. The pans may be made of any heavy sheet metal. They are usually made about 8 inches deep and 18 to 20 inches wide and long. The sides must be slightly flaring, so as not to burst as the water freezes. They are most successful when lined with paraffin.

What the Road Past Your Farm Means to You in Dollars and Cents

By Trell W. Yocum



This is a picture of Bonita Road, near Meridian, Lauderdale County, Mississippi, in February, 1912, before the good roads program Mr. Yocum tells about in this article was put into effect. How much hauling could you do over roads like this?

This is the same road you have just looked at in the other picture, except that this picture was taken a year later, in March, 1913, after Bonita had been made over into a real highway. Do you think the value of the property along this road is higher or lower than it was with the old road? If you want to know what to do to get better roads in your community, write to us, and we will put you in touch with the right officials, local, state, or national, who can tell you.

DO YOU remember the quotation from Don Quixote that says, "Tell me thy company and I will tell thee who thou art?" asked my acquaintance in the smoking car as we rolled across Iowa last September.

"Why, yes, I do remember having heard something to that effect," I replied.

"Well, if Don Quixote had lived in Iowa in these more modern times, he would have changed that saying of his to 'Tell me thy road and I will tell thee the farmer thou art.'"

He looked out for several minutes at the landscape rushing past before he added.

"You see, I've sort of grown up with Iowa, for I came out here when I was only seventeen years old, and there've been a lot of changes since the middle seventies. The Lord blessed Iowa with good dirt, but He didn't give her many ready-made transportation facilities. But we've—"

Suddenly he leaned forward and pointed to the neat buildings of a farm we were passing.

"See that place with that good pike in front of it? Eight years ago that farm changed hands at \$130 an acre. Six years later, with that pike fixed up—it's a part of the Lincoln Highway, you know—it sold for \$320 an acre. You'll have to allow some for natural increase in land value, but I'll venture that at least \$9,000 of the increase can be laid to that pike. Yes, sir, good roads are the bootstraps Iowa has made to pull herself out of the mud."

I was on the last leg of a trip that had carried me nearly 12,000 miles into different parts of the United States. I had traveled afoot, on horseback, by automobile, and by rail, and I had the opportunity to substantiate at first hand at least one of his statements—namely, that good roads and good farmers go together. Good roads are the bootstraps that are lifting not only Iowa but nearly every other State of the Union out of the mud.

There is no definite way, generally speaking, by which one can measure either the cash or social benefits that a community gains from the establishment of good roads, for they are too intimately woven into the very fabric of community life.

Nevertheless, to one who has studied road matters it is apparent that the advantages of improved roads have been proved beyond all argument.

The various ways good roads benefit a community are contingent one on the other. Take the county of Lauderdale, Mississippi, for example. Nearly ten years ago the movement for better roads was started. The improved roads in this county were instrumental in reducing the cost of hauling, and at the same time the adjacent lands increased in value; there was a tendency for the population to increase, and in its turn this tendency strengthened the

demand for more good roads; social conditions improved, and the life of the community was favorably influenced in various ways.

One of the Lauderdale County papers addressed an inquiry to a number of farmers living along the improved roads to bring out an expression of opinion as to the value of them. The replies were favorable, and from the many received we quote portions from three of them, as follows:

"It is impossible to enumerate the advantages of such a road as this. It is the only time in my life that I have ever realized any direct benefits from taxation, but paying taxes for road improvement with me, after seeing and realizing what it means to the whole community, is a pleasure; and I don't think you can burden a man with taxation when he gets results like this from it."

"I have heard of compulsory education agitated, but if I were a member of the legislature I would offer a resolution advocating compulsory road construction, for a man that is opposed to it is either ignorant of what it means to him, or is a fool, and I think the State ought to look after such people. I get paid over and over every week of my life by watching the school children pass my house to and from school, perfectly comfortable regardless of weather conditions."

"I have never made an investment for which I have gotten as much financial returns and satisfaction as I have out of this road. The advancement in property alone has been sufficient to pay four or five times the whole cost of construction, and I don't think the county could make any investment that would bring in as much return as to build a network of them all over it. It is such a good thing that I want every man in the county to have one like it, and I am willing to pay my part of the taxes to help him get it."

How Lauderdale Did It

Lauderdale County is for the most part hilly, with small acres of rolling land and level creek bottoms. The soil varies from sandy loam to bright red clay. During certain seasons the natural-soil roads are impassable for loaded vehicles.

The campaigning for better roads was inaugurated in 1910, and bonds were issued by the county board of supervisors upon petitions submitted by taxpayers. The first bonds were issued September, 1910, and at various times thereafter until March, 1915, when they totaled \$500,000. They were not issued as county liabilities, but were chargeable to the respective beats, which corresponds to townships in other States.

Construction on these roads started in 1911, and was completed in the spring of 1915. Lauderdale County adopted what is generally known as the deferred serial method of bond issuance, and it will begin the retirement of the bonds starting with the tenth year after its issue. While

the former method is usually recognized as providing greater security and economy than the so-called sinking-fund method, the Federal Office of Public Roads has pointed out that it would have been more advisable to begin the retirement by paying a portion of the principal between the fifth and tenth years. In this way the burden of taxation would have been lightened by spreading it out over a longer period of time. Since this was not done, the taxpayers will have experienced the benefits of the roads for ten years at a low financial outlay, represented by payments of interest, and then when the striking conditions between the unimproved and the improved will have passed out of their minds they will be suddenly called upon to assume an increased financial burden in order to provide funds for the retirement of the principal.

The improved roads constructed from the proceeds of bond issues in this county were built by contract under the direction of a county highway commission, consisting of three members. The important sections of the commission were provided by the county board of supervisors. All bills were checked by the engineer, who was employed by the commission, and approved by the commission and paid on the order of the board of supervisors.

The ten main market roads which radiate from Meridian like the spokes of a wheel, and one branch to a main road, were macadamized, making a total of 51 3/4 miles, and the distance from the ends of the macadamized portions to the beat line were surfaced with sandy clay, making a total of 45 miles of this latter type. The roads were graded 22 to 24 feet wide in fills, and 28 to 30 feet wide in cuts, with four-foot shoulders and three-foot ditches. The macadamized surfaces were from 14 to 16 feet wide and six inches thick, consolidated. As a rule, the sandy clay mixtures were largely used in this construction. It was necessary to ship in the material for the macadamized construction.

It is interesting to note that for ordinary road work convicts are regularly employed. They are divided into three camps and used for grading and the building of sandy clay roads in the outlying districts, and are now used for the general upkeep work all on county roads. All costs are paid out of the general fund of the county.

Mississippi has a splendid provision in the general laws of the State that requires a special tax of not less than one mill shall be levied for the maintenance of all roads constructed by means of bond issues. This fund is kept separate, and can be used only for maintenance. The result of this provision is that instead of running down the roads they actually improved from year to year, and were in splendid condition at the time the last inspection was made by the Federal Office of Public Roads.

When the roads begin to show the least sign of wear they are patched and retreated. About one-fourth gallon of the material per square yard is used in the second treatment, and the cost averages about \$400 per mile, which includes \$20 to \$25 per mile for patching.

One man is employed constantly to keep ditches open and to take care of other small repairs.

One reason the sandy clay roads of Lauderdale County are in such splendid condition is that they are not afraid to use the split-log road drag, and occasionally they are worked over with road machines.

Personal investigation concerning the effect of road improvement on land values by the Office of Public Roads brought out many specific instances of increased values from 50 to 500 per cent coincident with the improvement of the roads. One tract 4 1/2 miles from the county seat, containing 40 acres, cost \$1,000 in 1911 and sold in 1912 for \$4,200. Another tract of land containing 200 acres, less than six miles from the county seat, was estimated to have been worth \$5,000 in 1911, but after the new road was completed the owner refused an offer of \$9,500.

The average valuation of farms along one of these roads before it was improved was \$23.89 per acre, while after improvement the average per acre has risen to \$55.18, an average increase of \$31.29, or 131 per cent.

Cost of Hauling Decreased

According to statistics collected the average load on the old roads for a two-horse team was 1,500 to 2,000 pounds, and on the new roads from 2,500 to 3,500 pounds. On the basis of an eight-mile haul as a day's work, the cost per ton a mile over the old roads is figured at 37 cents. Based on a ton-mile haul, an average load of 1 1/2 tons, plus cost of man and team, the hauling cost on the new roads averages [CONTINUED ON PAGE 38]

Roads

By Charles P. Huntington

Proprietor Shore Acres Farm, Gray's Lake, Illinois

ROADS are of such importance that they may be compared to our lives: they are both good and bad; they are smooth, even, level, wide, and full; they are hilly, narrow, and winding, dangerous, shadowy, and bright; and they show the effects of environment and care, even as we.

They are the very means of our life, for over them pass the food which must keep the people of the cities alive.

Without roads, cities could not survive, and country-folk would be without many of the present necessities, comforts, and luxuries of life, which they are now able to enjoy. They are the connecting link between the city business man, the manufacturer, and the farmer, dairyman, and producer of food. They alone make it possible for both country and city to live up to our present standard of living, and they will be largely responsible for any rise which may take place in that standard.

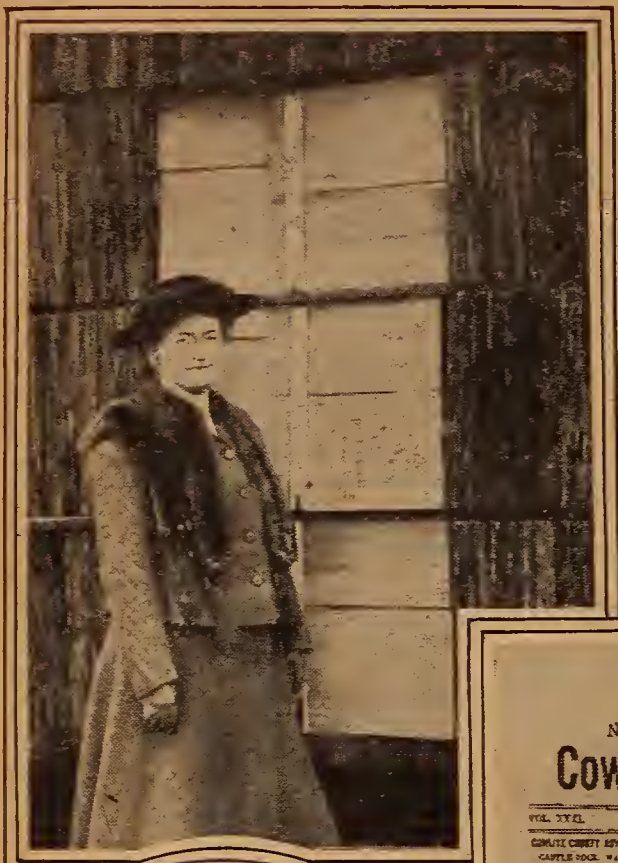
Who then can place a value on roads, and who is great enough to say what their true service to mankind is? Can any man picture a country or a land without roads?

A good man [sets an example; a good road is likewise an example, and as we have too few good men, so have we too few good roads. We have just emerged from a great war, and both our allies and our enemies had good roads, and I hesitate to think how much longer we would have had to continue the fight, and of how many more of our boys would now be sleeping "over there," had the roads of France and Belgium not been good.

We are doing well in acquiring and building roads at present, and our legislation is to be commended for starting this creditable work; but when we find a travelable road going past every farm, through every village, town, and city, then will it be time enough to cease talking "good roads." They are fundamentally essential to the highest advancement of our own civilization.

This is an individual problem—your problem. There is something you can do to promote good roads in your community.

Queer Publishers



THIS queer publisher is Mabel McClane Brown, editor of the "Crowlitz County Advocate" of Castle Rock, Washington. She found that print paper had gone so high in price it would be cheaper to print her paper on shingles. So she did it. And it made such a hit with the folks in the premier shingle state of Washington that the circulation immediately jumped to 100,000. It certainly is worth while to have a paper like that. First read it—and then repair the roof with it.

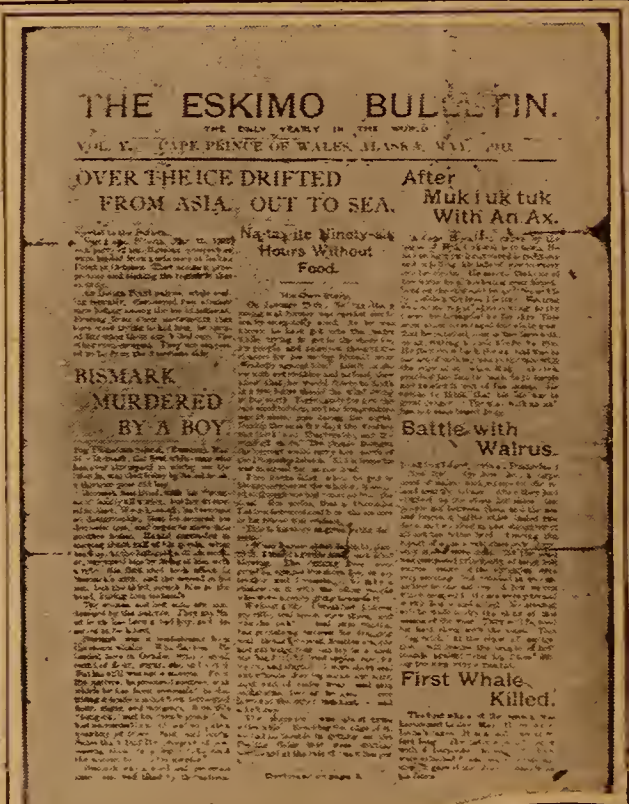
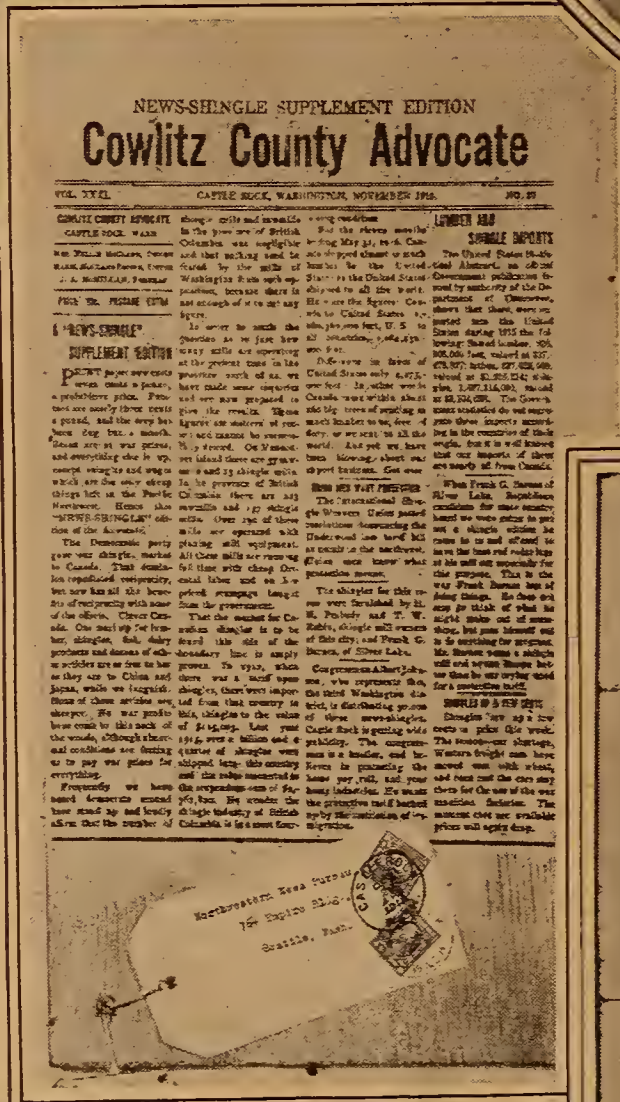


Photo from H. E. Zimmerman



Photo from H. E. Zimmerman

THE "Weekly 101," is edited by Robert R. Fitzgerald, twenty, of Lawrenceburg, Indiana. It is printed in lead pencil, and, strange to say, is from eight to twenty pages of standard newspaper size. Everything about it is hand-lettered, including the ads, comic section, and illustrations. Two hundred issues have already appeared. Fitzgerald works in a local factory ten hours a day, and gets out his paper after hours. President Wilson wrote him a complimentary letter on his paper once. Fitz says he'll keep the sheet going unless his "press" gets writer's cramp.



INTRODUCING "The Eskimo Bulletin," Cape Prince of Wales, Alaska, the only year-round newspaper in the world. It is printed by the Eskimos themselves, the same Eskimos who no longer ago than 1890 killed the first American who appeared in their part of the world to get them civilized. But another American, named W. T. Lopp, came along soon after that, and tried it again. He succeeded, and—well, you can see for yourself that it's a pretty good-looking little paper.



Photo from Earl H. Emmons

FOUR young women compose the editorial staff, circulation, advertising, and mechanical departments of the "Seneca Kicker," an eight-page weekly newspaper published at Seneca, a small town in Venango County, Pennsylvania. The town is a mile from a trolley line and several miles from a steam railroad. The "Kicker" is the only newspaper in the world chronicling the births of infants in rhyme. From left to right in the picture the names of the young women are as follows: Anna C. Kinney, editor; Anna S. Hart, compositor; Lucy Williams, job compositor; Effie L. Heckathorn, compositor. At present Miss Heckathorn is acting in the capacity of "devil."



Photo from H. E. Zimmerman

How Guthrie and His Fellow Farmers Solved the Packer Problem

By C. T. Conklin

Instructor in Animal Husbandry, Ohio State University

WE REGULATE our own packer to suit ourselves," said James Guthrie, one of the largest meat producers of the Corn Belt, to me in commenting on the recent packer investigations.

James Guthrie ought to know what he is talking about, for he turns the crops of 5,000 acres of Marion County, Ohio, black land into pork, beef, and mutton, and he is president of an organization that pays him and the other farmers of his county the profits of a stockyards, a commission firm, and a packing plant.

In fact, these stockmen of Marion County are staying with their pigs from birth to bacon, and as a result they are pocketing the margin that generally goes to the shipper, the yards, the commission man, and the packer.

Located in one of the most fertile districts of the Corn Belt, and with practically every farmer feeding cattle and hogs, Marion, Ohio, became known in the Eastern markets as the loading point of market-topping beef and swine.

But according to Mr. Guthrie there was only too frequently a decided slump in the market between the time this good stock was loaded and the time it was offered for sale in the terminal yards. Sometimes stock was ready to leave the farm and no cars were available. Not infrequently mixed loads were leaving three or four shipping points in the county, whereas the animals might have been graded into uniform lots and shipped from one central yard, with a little bigger check coming back to each feeder.

All of these leaks in the business soon convinced Mr. Guthrie that a local stockyards would enable these farmers to do a bigger and more profitable business. So with Guthrie backing the plan with his enthusiasm and his dollars, an organization was perfected, shares were sold, and a plant constructed.

Of course, anyone could purchase stock in the company, but an effort was made to place it with the men that were feeders, thus creating a local interest among the farmers in this new organization. The wisdom of this plan of getting the farmers back of an enterprise that would solve their problems is apparent, for the "old-line" live-stock shippers and their associates did all in their power to break up the new organization.

But the Marion yards grew until, during the last year, more than half a million fat hogs went over their scales. The feeders got a little more at the yards than the shippers could afford to give, and soon the shippers went out of business.

Then Guthrie got the farmers together, and they all decided that, since the local yards were a good thing, a packing plant would be still better. So they dug down in their pockets, and the result is a modern yards and packing plant owned and operated by the farmers. The first year's business shows that the entire plan has been most successful financially, and in addition the feeders themselves feel they are getting the maximum profit out of the products of their feed lots.

"When I want to sell my hogs I call up the yards and find out what they are worth before I leave home," said a big feeder. "It beats the old plan of shipping them and then taking what you can get." All morning the telephone in the yards office is busy as the farmers within a radius of 25 miles are posting themselves on the hog market.

According to Guthrie there are 50 trucks bringing stock into this plant. Some of the truck drivers charge a hauling fee, others buy the stock outright from the farmer and then resell at the yards. Nevertheless, the point remains that the farmers get the present-day's market price for his stock the day it leaves the farm. If he is not satisfied with that price he can hold his hogs until another time.

"And," added Guthrie, "we have been getting our business simply because we can outbid the other fellow. If anyone else is paying more than we are, the farmer would



Here is a picture of James Guthrie, the Marion County, Ohio, stock farmer who got together with his farmer neighbors and organized a local packing house, stockyards, and commission company to handle the meat products of that county, thus insuring himself and his neighbors against market fluctuation in the big central markets. This co-operative scheme, under the name of the Marion Stockyards Company, James Guthrie, president, has not only worked wonders for the farmers' profits, but it has also made a profit itself, after paying the farmers a fair price for their stock.

This is a picture of the farmer built, owned, and operated packing plant at Marion, Ohio, which has been so successful in solving the packer problems for the stock farmers of Marion County. The day may come when the entire packer problem will be solved nationally by similar farmer-built plants running all over the country, furnishing the big packers with a little healthy competition. Then legislation for packer control will be no longer needed. On the "Our Letters" page in this issue there is a little further discussion of this matter in reply to a letter from one of our subscribers.

Conversation Never Yet Has Cured a Real Sick Patient

WHEN the doctor calls and finds your pulse racing, your fever high and your bones aching, he doesn't sit around and talk about it. He acts. First he tries to find exactly what the trouble is, and then he sets about to cure it.

By the same token, we will never solve the packer problem by talking about it. And that's about all that has been done to date. Hence, we are bound to admire those who have taken definite steps to set things right. And we are glad that in this case they happen to be good American farmers.

Instead of spending their time in railing at the things they think are wrong about the packers, the Marion County, Ohio, farmers, Mr. Conklin tells about on this page have established just what the situation needs—a little first-class competition. They have not only gotten cost of production plus a fair profit from their feeder stocks, but the backers of the local packing plant have made a good profit too.

We print this article because we want to see more action and less talk about the packer problem, and because we believe the Marion County plan is one that would lend itself, in some form or another, to the solution of your own feeding and shipping situation in your own community. We feel sure that any of you who get together with the idea of doing business on this plan will find Mr. Guthrie and the other Marion County farmers only too glad to give you the detailed plan of their organization for your own use.

THE EDITOR.

doubtless be selling his stock elsewhere."

The Marion Packing Company's plant is financed by the same farmer capital that is backing the yards, while Lowell Guthrie, son of James Guthrie, is president of the packing organization. Three hundred hogs and fifty cattle a day is the capacity of the plant. The finished product is sold in the nearby towns and in the largest manufacturing towns of Western Ohio. Two salesmen and a fleet of motor trucks sell and deliver most of the meat.

According to Lowell Guthrie, the real problem of distributing meats by the small packer and the farmers' organization is the lack of suitable cars. Of course there are refrigerator cars available, but they are not equipped with racks for hanging the meat while in transit. The expense of installing these racks is almost prohibitive, especially

since there is little possibility of getting the cars back again.

As a consequence, in Guthrie's estimation, the little packers are going to be forced into the practice of the big packers—that of owning and equipping their own refrigerator cars. Whether this is going to be profitable is a question still to be solved.

"The inefficient methods and the great amount of service the retailer must perform results in his demanding an enormous margin," said Guthrie. "Furthermore, these retailers are not profiteers, they are not getting rich, they are simply servants of the consumers. I believe it is the smallness of their business rather than bigness of the packer's business that is causing such high prices for meats."

Guthrie then told of selling bacon at a wholesale price of 31 cents, and of its being

retailed for 60 cents right in the city of Marion.

The utilization of by-products has been no bugbear to these farmer-packers. They claim they are using everything that anyone can use, and it certainly looks that way. The hides are taken off by experienced workmen without scars or cuts, and are of approved packer pattern. As a consequence they are sold at good prices to hide brokers, who in turn place them with the tanneries.

Casings are all cleaned, salted, and stuffed for a big sausage trade. Grease is so carefully conserved that even the floor washings are skimmed in the settling basins. Fats of different grades are sold to manufacturers of soap and other articles. In addition, the tannage business has been built up, and all that can be made is sold directly to the farmers that bring in the live stock. At present the supply of tannage is not equal to the demand.

Furthermore, the dead stock of the county is brought in, skinned and tanned, with additional saving and profit to both patron and company. According to J. D. Harrison, general manager of the plant, the by-product business is very profitable, and a plant of this size, when properly equipped, can handle these side lines as efficiently as a bigger establishment.

It is interesting to note the rôle this stockyard plays in connection with the farmer's business. When there is a surplus of stock, so that the local packers cannot handle the output, carloads of hogs and cattle are shipped to larger markets. In this event the stock is purchased on arrival at the Marion yards, and shipped by a commission firm representing these farmers. If the market breaks the losses are really pooled, and no one person bears the brunt of the low market. If the market rises, the farmers' organization makes a profit that comes back to the original proposition that a farmer knows just what he is going to get for his stock before it leaves the county.

Another feature of this company's operations is the feeder trade. Thousands of hogs are shipped in, immunized, and placed with the farmers for a feed of corn and tannage. Standing orders at Western markets bring on good cattle when they can be bought right.

If a man does not have the money to pay for these cattle, he can take them out to his feed lots, settling for them when they are finished. This year the cattle are charged to the farmer at 10 cents a pound, and credited back at 12½ cents, with a reasonable interest charge on the cost of the cattle.

This means more feeding, more profit, and better farming. It also means more business for the yards. The fact that safe and easy credit is available for the farmer is an inducement for him to feed. With the packer and yards backing the feeder, there is little danger of his credit being curtailed and his being forced to unload his cattle at an inopportune time.

The commission firm and the stockyards are really just as important as the packing plant, so I have tried to tell you their advantages along with those of the farmers' meat-packing business. The entire place seems to be well managed, made a profit its first year of some \$25,000, and seems to be in a thriving condition.

The verdict of the Marion County farmers is that the local packing plant is there to stay. Those that predicted that the stock would be selling for 25 cents on the dollar now want a few shares.

One landowner remarked that the new industry had actually increased the value of his land \$25 an acre. Another feeder stated that he, and his neighbors had actually got at least a dollar more per hog than they would have secured under the old-fashioned method of shipping.

According to the elder Guthrie, the scheme has made good, simply because the farmers have believed in it and have backed it with their money, brains, and spirit, and he sees no good reason why similar plants should not be built and operated by you stock farmers in other sections.

Cupid Astride a Mule

Davy finds things are getting all tangled up, and decides it's high time he took a hand in straightening them out

By Samuel A. Derieux

Illustration by W. B. King

This tells you what has gone before

DAVY ALLEN, fourteen, an orphan and ragged, had a bill to collect for his Uncle Ben, at the Ridgeland Hunt Club of South Carolina. He set out on Pete, his obdurate and lazy mule, in the wee sma' hours, and arrived at the club drenched by a morning shower. Agnes Waring, an heiress from the North, saw him and insisted he dry himself before the fireplace.

At the Hunt Club were also Philip Girard, a poor but ambitious writer, and Bernard Fleming, a brilliant young doctor, both in love with Agnes. While talking, Girard suggested that they ride back with Davy and hunt birds, as Davy declared there were "millions of 'em" near where he lived. Dr. Fleming could not go, as he was awaiting a telegram, but the others set out and he promised to join them later.

Agnes does not care to hunt, so Davy and Girard leave her at a deserted hunting lodge while they go after birds. She grows tired of waiting, and decides to ride on back to the club alone, but turns off into the swamp road. Just as she is finding her way back she encounters Jake Raines, the ruffian of the community, who stops her horse and demands that she hand over the necklace she is wearing.

In the meantime Davy and Girard return to the lodge, and are worried over Agnes' disappearance. When they discover, by telephoning, that she has not reached the club, they organize a searching party and Davy reaches her just in time, and holds Jake Raines at bay with his gun until the others come up. Girard is the last to reach the scene, a fact which puts him in a bad light in Agnes' eyes.

Agnes and her aunt return to New York the next day, accompanied by Dr. Fleming. Philip remains South a while longer, but immediately on reaching New York calls on Agnes to plead forgiveness, and to explain that it was due to his anxiety that he had been the last to reach her the day of the hunt—he had urged his horse on, it had stumbled, and he had been thrown.

Being forgiven, Philip plans to take her to the matinee the following day. He then goes to see his publisher about his latest book, to discover that the publisher is disappointed in his work and cannot use it until it is revised. As he has not been well, Philip next calls on Dr. Fleming. He is examined, and advised to leave the city immediately and live in the open. Dr. Fleming suggests that it looks like T. B. Philip realizes that he cannot now tell Agnes of his love. At the matinee the following day he determines to follow the lead of the hero of the play, who shatters the ideal the girl has formed of him in order not to involve her in his misfortunes. Philip begins by expressing his belief in views he knows to be hateful to Agnes. He leaves town next day without telling her good-by.

DAVY ALLEN opened Gant's General Merchandise Store, built a roaring fire in the stove, swept, and rested from his labors. In breezed Susan, hung up her hat and cloak, and joined her newly employed assistant at the stove.

"Got some news for you," she announced. "Of course, you won't tell anybody but your uncle Ben, and he won't tell anybody but your aunt Sally, and she won't tell a living soul until she can run to the nighest telephone. Me and Sam Long are going to marry!"

"When?" asked Davy calmly.

"When? Did you ever see the nerve! You're not as excited as you would be if a pig had got out of the pen, you little bundle of rags! Why, in the spring—provided I don't change my mind." She surveyed the floor. "Get the broom!"

"Done sweep' once."

"Get the broom!"

Reluctantly Davy took the broom from the corner where he thought he had stored it for the day. While Susan, humming a lively air, followed him with her eyes, he

carefully swept the store all over again. "Now clear out and chop wood!" she ordered. "Think I hired you for an ornament?"

Davy went sulkily out of the store. "I'd druther plow an' be done with it!" he muttered.

He had just picked up the ax and spat on his hands when Susan called him.

"Somebody wants you at the phone."

"Me? Want me?"

"Yes—rural policeman wants that gun. New law's been passed. Boys not allowed to tote guns."

"This is me," yelled Davy in the phone. "Who?" He almost dropped the receiver.



Davy wheeled round. They stood together, her hand in his, her head very near his shoulder, the sunset behind them

"Yes, sir. . . . Yes, sir. . . . Yes, sir. . . . She works me awful hard. . . . Have to ask her." He looked at Susan. "Hit's Mr. Girard—at the hunt club!" He announced out of breath. "He's goin' to live in the lodge! He wants me to clean up an' git a boy to cook for him. He says he's already called Sam Long up. Golly!"

THE coming of Girard to Sunset Lodge was an epochal event for at least two persons—Davy Allen and Susan Gant. Davy's delight proceeded from the simplest of motives. As for Susan—

Mr. Girard was a city man. There was a glamour about Mr. Girard. He had the finest eyes and the most winning smile. He was lonely, that was plain.

In the weeks that followed his arrival he spent much of his time in the store. On Sundays he went over and sat with Uncle Ben and Aunt Sally. He was romantically pale and thin. Plainly, something had been disturbing him since he left.

Why had he come back here? Susan's charms were famous in the countryside. She had exercised them to the fullest on Girard when he was there before. If a little attention from her smote rustic hearts was it not possible that marked attentions had made their impression on this man from the city? Was it not possible? Well, stranger things had happened.

Susan was not the girl to sigh and dream. Carefully she planned her campaign. Her smiles grew brighter and more fraught with meaning, her interest in Girard more marked. As for Sam Long—well, he was a man in his way, big-fisted, ready-witted, masterful. She was just a little afraid of Sam, and she thrilled with the fear. But if she were allowed to make her choice

between the boss at a lumber mill and a man from the city—Susan shrugged her shapely shoulders.

Her campaign was boldly executed. There was nothing overdiligent about Susan. She talked to Mr. Girard when he came to the store; she made excuses to detain him. She asked him if he wasn't lonely. She sighed audibly. And Sam Long was at first grave, then serious, then angry.

As for Girard, he was courteous; he was even interested at first, for he was young; but he was a level-headed fellow and a gentleman. It was Davy who was alarmed. He saw the look in Sam Long's eyes when the lumberman came into the store to find Girard there.

Then one afternoon Will came by the store with a holiday coat on his back and a holiday grin on his face. Mr. Girard had let him off to go to a dance. Mr. Girard had told him to stop by the store with an order for some groceries. Susan put them in a basket, the fruit arranged on top.

the counter. But the man followed her. She turned.

"What is it, Sam-u-el?"

Long flushed.

"Just this! It's got to stop. No good can come of it. There's two of you. If I can't stop you I can stop him. If he don't stop of his own choice, he'll stop anyhow. Understand?"

Davy Allen had stopped scrubbing. He watched Sam's face with starting eyes. He had heard enough. He slipped around a barrel, out of the back door, and started running down the road. To his boy's mind physical strength was the determining factor in any struggle. Sam Long could break Mr. Girard's back across his knee.

Davy ran faster. He must warn Mr. Girard. Then he slowed up suddenly. Would Girard heed his warning? To a boy like Davy there is one supreme virtue, physical courage; and one supreme vice, physical cowardice. Would Mr. Girard, his idol, take a dare?

"Well, I guess not now," he said, and shook his head admiringly.

Girard opened the door for him.

"Why, it's Davy!" he cried.

"Just 'lowed I'd drop over and see you," said Davy apologetically, twisting his hat.

Girard made him eat supper. Then they sat down before the fire. The time had come. He wasn't over there on a social visit. Somewhere Sam Long sat brooding with clenched fists. Davy took a deep breath.

"Did Susan fetch yo' things?" he ventured.

Girard frowned and glanced at him suspiciously.

"Yes."

"Sam an' Susan had a fuss after she come back."

"Did they?" Again Girard frowned.

"Ain't you an' Miss Agnes good frens?" asked the boy desperately and plaintively.

Girard rose and looked down on him, still frowning like a father dis-

pleased with a son.

"Who told you to ask that, Davy?"

"Nobody. You are, ain't you?"

"Yes. Why?"

Davy toyed with the ears of the pointer.

"You goin' to write her soon?"

"Davy," Girard spoke seriously, "it's bad for a woman to gossip. A real man never gossips. Remember that, boy, all your life."

Davy glanced up quickly.

"I ain't no gossip! Who said I was a gossip?"

"Then what are you driving at?"

"I heerd Susan say you ain't never wrote to Miss Agnes since you been here."

"With all due respect to Miss Susan, Davy," said Girard, "I would say that's none of her affair."

Davy was breathing easier. They were arriving on common ground at last.

"I study 'bout Miss Agnes a lots. She wouldn't never go back on nobody. See this here tooth? She sent Uncle Ben five dollars to have it fixed with. I ain't got a better tooth than what this is—could bite through a nail with it. I wish she was here now, I do!"

Girard sat down.

"Davy, old man," he said slowly, "Miss Agnes doesn't know where I am."

"Don't know whar you be!" cried Davy. "Likely she thinks you're dead an' buried by this time! Why ain't you wrote?"

"Well, you see it's this way, Davy; A sick man hasn't got any right to bother a girl."

Davy pondered this new ethics.

"Gals like to wait on sick folks," he said. Girard leaned forward.

"Davy, you came here loaded for bear. You've got the [CONTINUED ON PAGE 42]

Part and Parcel of the Goodyear Service Plan



HOW TREAD CUTS GROW. If your tire receives a small tread cut that is not attended to, this cut will soon grow in size, causing quick ruin to the tire as shown above. It is wise to have your Goodyear Service Station Dealer repair these cuts immediately, or show you how to do it yourself with the Goodyear Tire Putty Outfit.



HOW TO USE THE GOODYEAR TIRE PUTTY OUTFIT. Scrub and clean out the cut thoroughly with gasoline and allow to dry. Apply with metal spreader two coats of Goodyear Cement, allowing each to dry. Knead a portion of Tire Putty until it comes free from the palm of the hands, then, when the last coat of cement is dry, ram and wedge the kneaded putty into every part of the cut. Use more than enough to fill.



LET THE TIRE STAND 12 HOURS—OR LONGER. When thoroughly dry and hard, trim off the ragged edges of the repair with a wet knife. The job is complete, the tire is saved, and the repair will last fully as long as the rest of the tread.

LIKE every other Goodyear Tire Saver, the Tire Putty Outfit, illustrated above, occupies a definite place in the Goodyear Service Plan.

Briefly, this plan supports the fine quality of Goodyear Tires and the convenience of their distribution with an effort to help users get all the miles built into each tire.

By lessons on tire conservation, by constant educational work among our many thousands of dealers, by frequent and instructive advertising, Goodyear is carrying on this work.

The Goodyear Plan of Service asks that you avail yourself

of your privilege of using the knowledge and advice of your Goodyear Service Station Dealer.

It aims to assist you, by means of Tire Savers and Conservation Lessons, to take care of your tires, to prevent the small injuries from growing into larger ones.

So, naturally Goodyear Tire Savers become a part and parcel of the Goodyear Service Plan for they add thousands of miles of service to injured, worn tires.

Keep them in your car as part of your equipment. Get them, with the six lessons on tire care, at the orange and black sign of the Goodyear Service Station Dealer, or write to The Goodyear Tire & Rubber Company, Akron, Ohio.



The Man Who Made Wisconsin the Banner Seed Grain State—And How He Did It

By W. A. Freehoff



This is the man. His name is R. A. Moore. He started as a school teacher, got together with the farmers' sons of the State of Wisconsin, and built what is said to be the world's greatest seed-grain business—about \$2,000,000 worth a year. Also, incidentally, showing how any farmer can change from poor seed to good seed, and make more money

WHILE it is impossible to give absolutely accurate figures, it is estimated that Wisconsin farmers sell about \$2,000,000 worth of pedigreed seed grains annually, and have developed Wisconsin as the leading seed-grain State in the Union.

Back of the building of this business is a romance, the story of what a man with vision and determination can do.

Not a genius, not a superman—just a good, hard-working average man like you and your neighbors. And the beauty of it is that what he and the Wisconsin farmers have done you and your neighbors can do.

I think there is something in the story for every one of us. It shows how good seed makes better farmers, happier farmers, more prosperous farmers. And any one of us can develop good seed grains right on our own farms. The man who doesn't know how can quickly find out from his

county agent and his state experiment station. They will tell you how to get the right start and keep improving every year. And now for the story that proves it:

About twenty-five years ago R. A. Moore was superintendent of schools in Keweenaw County, Wisconsin. He realized that upon the boys and girls must be built the foundation of sound farming of the future, so he saw to it that the boys and girls of Keweenaw County had a chance.

FARM life in those days was rather grim, consisting of plenty of toil and low prices for the products of the soil. Social conditions were backward, so that the more ambitious of the rural youngsters turned longing eyes upon the city.

Young Moore organized a young people's society in one of the schools, and then another. Soon he had them grouped all over the county. The boys and girls met at different schools.

At the same time, Moore had taken hold of the Keweenaw County Fair, and put it on its feet. He had been especially interested in fine grains, and had done much to promote better grain-growing through prizes.

It was at about this time that Dean W. A. Henry of the Wisconsin College of Agriculture was looking around for a man to take charge of the newly organized short course. He didn't want a man especially for teaching, but a man who could go out in the State and interest farm boys in the new course. He heard of Moore, and called him to Madison on December 24, 1895, as assistant to the dean, and to take charge of the short course.

To this new line of work Moore brought his love of fine grains, and before long started a few experimental plots at the college farms.

Moore knew that if the short-course students were to succeed they must have something which would tie them to the farm—something profitable.

At the Minnesota Experiment Station he saw some of the experimental work being done with wheat, and decided to have his classes do similar work in Wisconsin.

It was one thing to form improved strains of grains, and another thing to get them

generally adopted by the farmers. Professor Moore knew that if the college offered its improved grains in small lots, not much progress would be made, because most of the farmers would be skeptical.

By 1901 he had some grains ready for distribution, but his idea was to get them grown in million-bushel lots. These strains were not pedigreed grains, but improved varieties of old types. It takes at least eight years of careful breeding and selection to get a pure-bred grain.

As a means of getting these better grains distributed, and to give his short-course boys a profitable farm idea, he made them not only the producers but also the salesmen of better seeds. In 1901 he called about two hundred of them into conference, and made them this proposition:

"You boys have seen at first hand what these better strains of corn, barley, and oats can do. But many of your neighbors at home do not know, and many of them will not take your word for it.

"Now, the college has several hundred bushels of seed available. We will gladly give each of you a peck of corn or a bushel of small grains, if you will agree to plant them by themselves, and keep a careful record of growth and yield. We also want you to show those plots to your neighbors. In the fall you can return the seed we have loaned you, out of your crop."

Moore called the organization the Wisconsin Experiment Association, as it was to be more than a mere distributing and promoting agency. These young college farmers were to help him in his work of trying out and developing better grains.

To-day the membership, over 2,000, is limited to men who are directly or indirectly interested in farming operations, and who must have been in attendance at certain courses offered at the College of Agriculture or county schools of agriculture.

THE association grew rapidly. Its members were enthusiastic over the new grains as test after test in the field showed them, to be better than the old standbys. Before long some of the members began to sell these improved seeds at wholesale, and to develop a special seed-grain business.

This brought up the problem of inspection. Unless these growers were carefully supervised, there was much opportunity for fraud or careless methods. So the experiment association has developed its own system of inspection.

This inspection is performed both in field and bin. Where varieties are not found true to type, or where noxious weeds are present, growers are forbidden to sell these grains for seed. To-day there are not more than five or six complaints a year.

The Wisconsin Experiment Association has a registered tag which is sold at wholesale to members. These tags are put on all shipments, so that if the buyer is dissatisfied he knows where to complain.

As the association grew it became almost too unwieldy to be handled entirely from the Madison office. So the county orders of the experiment association were formed. These were branch local organizations, and took over most of the detail work of the community. The secretaries of these county orders, and the county agents, are now valuable assistants in the inspection work of the main association.

Very soon it became apparent that the campaign to place alfalfa upon more Wisconsin farms was to be the leading work of the association. So the Alfalfa Order of the experiment association was formed, with L. F. Graber as secretary.

At present there are over 1,000 members of the Alfalfa Order. From 1907 to 1915 Wisconsin's alfalfa acreage increased seven times, and to-day Wisconsin is the leading alfalfa State east of the Mississippi.

In the same way that alfalfa was "put across," the hemp industry was planted in Wisconsin. When the legislature passed a law permitting the manufacture of twine at the state prison, difficulty was experienced in getting a suitable fiber.

Professor Moore was asked to find a remedy, and he put C. P. Norgard, a promising young professor, on the job. It was soon found that hemp could easily be raised in many parts of the State, but its culture was pushed particularly in the vicinity of the prison. To-day Wisconsin is the leading hemp State of the Union.

Professor Moore [CONTINUED ON PAGE 64]

Farming in Babylon Seven Thousand Years Ago

By William A. McGarry

THE farmer in Babylonia seven thousand years ago not only knew enough about irrigation and agriculture to make his grain return "two hundred fold, and even up to three hundred fold," but he also had at his call a priest who sold magic to rid his farm of locusts and caterpillars—a "magic" that in all probability consisted of some chemical compound that was kept a closely guarded secret by the wise men.

Herodotus, famous early Greek historian, was until recently the only authoritative source of information about the world's first farmers, artists, and scientists. Until archaeologists learned how to interpret the curious hieroglyphics left on clay tablets by the ancient Babylonians and Egyptians and the still older Sumerians, scholars were inclined to take with a grain of salt what the Greek writer said.

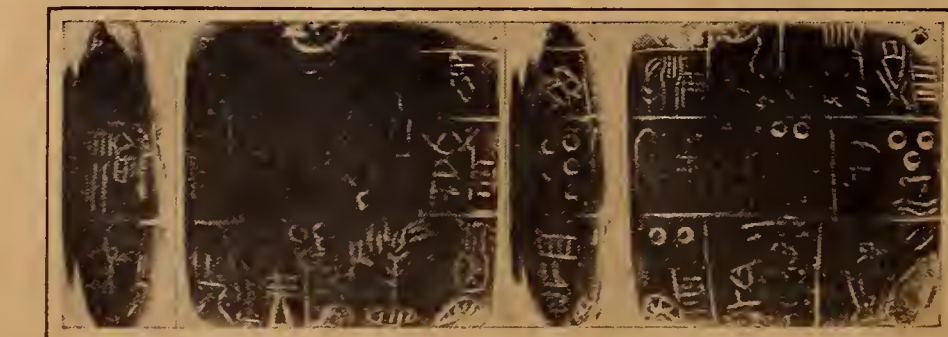
In the last few years, however, overwhelming proof has been obtained that Herodotus knew whereof he spoke. Scientists of the University of Pennsylvania Museum have been particularly active in the translation of clay tablets, since this institution obtained about twenty thousand such records in four expeditions sent out prior to 1900.

Agriculture quite naturally plays a most important part in these documents, for until men learned to till and irrigate the soil and to raise crops every man spent most of his time hunting, digging edible roots, or gathering such wild fruit as he could find. No one had time for building, for art or science, and there was no chance for the development of what the world calls civilization. The growth of the knowledge of agriculture released men for these other

pursuits, and made possible the building of spreading cities with huge temples, storehouses and homes. Musicians, poets, story tellers, and religious leaders were developed, and, quite naturally, men tried to make records of the things of beauty or of value that had appealed to them.

One of the earliest known of these rec-

ords is a small tablet of diorite, a greenish-black stone, two and eleven-sixteenths inches long by two and three-quarter inches wide, and three-quarters inch thick in the center, with tapering edges. It was bought by the university scientists from Arabs while they were at work at Nippur, the Calneh of the Bible, and has been tentatively dated at 4500 B. C.



This is the diorite tablet which tells about farming in Babylon 4,500 years before Christ was born. It is believed to be the earliest written record in the world. It was dug out of the Babylonian ruins by American scientists. The story on this page will tell you what the writing on the stone means

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The tablet contains what may well be the world's first record, in picture-writing, of an agricultural enterprise. According

to Dr. George A. Barton of Bryn Mawr College, who deciphered it, the tablet records the means taken to rid various tracts of land of a plague of locusts and caterpillars. In the first column the scribe drew a rude picture of a jug resting on supports. Presumably this contained the mixture that really did the work, but

Column 1, Case 1—One bur of land belonging to Khiginmi-Sal

Column 1, Case 2—At sunset the locust he drove out.

Column 1, Case 3—Their curse he established

Column 1, Case 4—He received (?)

Column 1, Case 5—A family (or group)

Column 2, Case 1—of 30 slave girls

Column 2, Case 2—two bur of fruit land belonging to Nunsabar

Column 2, Case 3—five bur

Column 2, Case 4—of land belonging to Udu-Sag. The man broke a jar.

Column 2, Case 5—he stood, he cut open a sacrifice, a word.

Column 2, Case 6—of cursing he repeated;

Column 3, Case 1—it went out . . . verily

Column 3, Case 2—against the caterpillar

Column 3, Case 3—two bur of land were purified

Column 3, Case 4—belonging to Enne (?)

Column 3, Case 5—the price of the purification is a tall (?) palm tree

Column 3, Case 6—three bur of a field belonging to . . . son of Nundudu, he offered a sacrifice.

Column 3, Case 7—he made it bright (?)

"The tablet," says its translator, "records the means taken to rid various tracts of land of a plague of locusts and caterpillars. In the first column the figure of a jug resting on supports is a different picture from any previously known of a well-known symbol of a jug resting on a stand. Column 1, Case 2, contains two new pictographs."

Clay tablets have been found dating back to kings known to have reigned three thousand years B. C. This record in diorite shows that the tablet must have been used many centuries earlier, because the stone is shaped like the later tablets in clay. The pictographs have been of immense value in determining the meaning of signs used in the form of writing that was finally developed out of picture-writing. Thus in Column 3, Case 2, the scribe has carved a rude picture of a caterpillar. With some abbreviations this sign was used for three or four thousand years to indicate worm, vermin, flea, or other insect. The picture of the locust is in Column 1, Case 2.

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COLUMBIA GRAPHOPHONE CO., New York
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Items from Here and There That You May Find Useful

By Andrew S. Wing

WE SAY hurrah for the following remarks, which some conscientious farming citizens of the lower Rio Grande Valley of South Texas addressed to a party of Northern men who were being "shown the wonders" of this region by a certain land company:

"Good people from the Northern States, if you like the looks of this country and want to buy land here, look around a bit on your own hook, and buy this land improved for \$50 to \$100 an acre. These land agents will sell it to you Northern settlers for from \$300 to \$500 an acre if they can."

"You are being herded by these enterprising agents in an isolated club house, and taken around only to exceptional farms and orchards, where prepared speakers are provided for you. Their club house is guarded; your agent sticks to you like a leech; the very drivers of your cars have their mouths sealed; the preachers, the lawyers, the doctors, the farmers are the same ones for excursion after excursion, and we understand they are highly paid for their services. These fancy farms and big talks are all intended to give you an exaggerated idea of the value of land in this valley."

Needless to say, a howl of complaint went up from the offended land agents, who promptly placed the speechmakers in jail, and succeeded in having them fined heavily. Now the Federal Government has stepped in, and the land agents are being watched, but it is too late to save the money of thousands of Northern men who have invested their savings.

We do not intend to cast any reflection on honest and reliable land agents, but the above example is given to show that it pays to make sure with whom you are dealing.

How They Fixed Him

Reports of scrub-sire elimination in all parts of the country certainly look good. In one community every sire of doubtful lineage has been done away with except one, with which the owner refused to part. Finally, however, a group of enterprising farmers, headed by the county agent, got the owner of the scrub to set a price and he set it plenty high, too. Then a subscription was raised, and the animal was purchased and consigned to the slaughter house.

South Dakota reports that the average herd of 20 grade cows in that State earned for their owners \$540 more profit last year when a pure-bred sire was used. The survey in that State showed that 65 per cent of all sires are grades or scrubs, and it is estimated that were all sires in South Dakota pure-bred the increased profit would amount to \$21,626,500.

Gage County, Nebraska, has 66 per cent grade or scrub sires, according to L. Boyd Rist, county agent, who writes interestingly in "The Breeders' Gazette" of the campaign to better this condition. He consoles himself and his constituents, however, by recalling that in Wisconsin, one of the greatest dairy States, only 26 per cent of the bulls were pure-breds. The movement is being given a great deal of support in all parts of the county, and the results already accomplished are very worth while. However, there is much left to do. If you have a neighbor who still clings to an old brindle bull of unknown ancestry, maybe you can remind him of the campaign and get him to change.

Do Horns Tell Age?

I ran across an interesting item in "The Breeders' Gazette" the other day, and it occurred to me that probably there were some of you who are as ignorant on the subject as I was. So I clipped it out and here it is:

"Most people 'read' the rings of the horns incorrectly. At about two years of age a small ring appears at the base of the horn, and another at three years. Then these two preliminary rings fuse and almost disappear; but a deep ring soon forms, and

indicates the fourth year. Correctly to judge age from the horns, one should count the smooth tip and the first slightly marked ring as representing three years, and add one year for each additional ring. In the aged animal there is a marked depression or lessening in circumference at the base of the horn, which, together with the loss of the broad parts of the incisors or great wear of these teeth, may be accounted unmistakable evidence of advanced age."

Some Tips on Seeds

The farmer who economizes by buying cheap seeds usually cuts off his nose in try-

be so favorable for corn. Of course, all seed should be tested for germination before using.

After all, seed corn is the cheapest seed used on the farm, as pointed out by the Missouri College of Agriculture, which says: "If seed corn costs \$5 a bushel, the seed used on an acre is worth about 60 cents. Just now it costs \$2.50 to \$3 an acre for seed wheat, \$4.50 an acre for red clover seed, and \$7 an acre for Grimm alfalfa seed, at retail prices. And yet it is usually considered that \$5 a bushel is a high price for seed corn."

You can get a lot of profit, and also enjoyment, out of an investment of a few cents' postage for seedsmen's catalogues.



Snow

LO, WHAT wonders the day hath brought,
Born of the soft and slumbrous snow!
Gradual, silent, slowly wrought,
Even as an artist, thought by thought,
Writes expression on lip and brow.

Elizabeth Akers

ing to spite his face. Although seed prices are necessarily higher than ever before, there never was a time when it paid better to buy the best. Labor costs make it unwise to risk the job of replanting or weed-grubbing by using doubtful seeds, and if you can get for a little more a selected strain that will yield heavier, you cannot make a better investment. As an illustration there are many strains of corn, oats, and other farm crops that yield from five to ten bushels more per acre than the ordinary varieties. You can well afford to pay a good premium per bushel for such seed, and will still make a larger profit because of the greatly increased yield and superior quality.

This is a good year to lay by a two-year supply of seed corn, according to the New York State College of Agriculture, which points out that corn is well matured this year and a great deal of excellent seed is available.

With a little care and attention, seed corn can be safely kept for several years without much depreciation, and next year may not

A few winter evenings reading about plant breeders' latest creations are well spent. It is well kindly to overlook the eloquent outbursts of enthusiasm in which the seedsmen indulges, remembering that he is only human, and that plants are his hobby. And very often it will pay you to take his word for the "lusciousness" of some new vegetable, the beauty of a new hybrid rose, or the big yielding qualities of some new grain variety.

Learning Better Farming

Farm work is lightest during the winter months, and that is the time when most States have their short courses in agriculture. You don't have to take any examination to get in, the tuition is usually free and the subjects studied are practical and easy to apply when you get back on the farm.

I know many farmers who take their wives and attend the short courses (usually about six weeks) every year, and say that

it is the best investment of time and money they can make. Not only do they get the latest, tried-and-true ideas on farming, but they also meet other farmers from all parts of the State, and learn a lot from them.

The college life is pleasant, too. In a way it's like a vacation, but differs in that you get a lot of good, practical information that will add figures to your bank account if you use it right. I don't want to tell you what to do, but I can't imagine anything that I would enjoy more than a few weeks at one of the colleges of agriculture, and I believe I would make it pay, too. There probably is one of these courses in your State this winter. And even if you are not interested in this, don't forget Farmers' Week, which is held by practically every agricultural college. It is the next best thing, and well worth a little of any farmer's time.

Bad Horse Stalls

That enough thought is not given by farmers to the size of their horse stalls is the opinion of L. Ogilvy, who writes in "The Breeders' Gazette" as follows:

"When I went to the stable I found the 16 and 17 hand horses in stalls not over 4 feet 6 inches in width. There were a number of stocked legs, some big joints, and a listless air as though they had rested badly. Moreover, the stalls were damp, and they did not contain a sufficient amount of absorbent. Mature horses age quickly enough, anyway, from the strains and vicissitudes of work."

"What is the sense of aging them prematurely by not giving them room to stretch and lie at ease in the periods devoted to rest. Sixteen hands is 5 feet 4 inches. How can any horse lie on his side and stretch in a stall less than that width? Yet horses are confined for weeks and months in pony pens, and expected to come fresh to work in the morning. The heavier the horse the more work he needs. A pony leg will outwear a draft leg any time, other things being equal."

"There is a legend that horses sleep standing, which is true when they suffer from some disability that makes lying and rising distressful, or when they are exhausted and cannot lie comfortably. But that does not alter the fact that the leg belongs to the horse, and must have the best treatment possible, or else it will wear out first. If one cannot afford enough stall room or roomy enough stalls, they should be used for feeding, and the horses turned loose in the yards, preferably with sheds in which to rest."

So let us give a little thought to the way our horses are housed, as well as our machinery and tractors. Steel-horse parts can be replaced, but a leg made unsound by improper stabling is a total loss.

Which Fertilizer Pays Best?

As most farmers are now buying fertilizers on a profit-producing basis, instead of with the idea of increasing production, regardless of cost, we believe that you will be interested in the results which have just been published at the Ohio Agricultural Station. Soil fertility experiments, which have been carried on there for more than twenty-five years, demonstrate that acid phosphate added to stall manure is the most effective fertilizer known.

While greater crops may be grown with large amounts of commercial fertilizer, the most profitable returns come from the use of reinforced manure. Figuring corn at \$1 a bushel, wheat at \$2, and hay at \$20 a ton, one ton of phosphate used with manure yearly has returned more than \$200 of crops on a 21-year average at the Ohio Station.

This home-mixed fertilizer is especially recommended for use with ground that is to be plowed for corn, or as a top-dressing for winter wheat. To make this effective fertilizer, simply add 40 pounds of high-grade acid phosphate to every load of manure as it goes to the field. Your spreader will do the rest.



The Protection of a Boot— The Comfort of a Shoe

A miner's rubber shoe that farmers everywhere are wearing

IN the wettest weather—over the muddiest ground—you can keep your feet as dry as in boots—and yet have all the lightweight comfort of a leather shoe.

The U. S. Bootee was designed originally for miners, who *must* have a waterproof shoe that will not tire their feet. It was specially made to withstand the roughest wear—absolutely watertight—and yet light and comfortable.

Today the U. S. Bootee is fast becoming popular all over the country—with farmers and all men who work out of doors. Worn right over your sock like an ordinary shoe, the U. S. Bootee is just the thing for everyday service around the farm. Its light weight and its smooth, easy fit will give you a new idea of real comfort in rubber footwear.

Strength, of course, is just as important as comfort. At the very places where rubber footwear is usually weakest, the U. S. Bootee has been made *strongest*. Its sole consists of heavy layers of the finest rubber. Every point of strain is specially reinforced.

Ask your dealer today to show you a pair of the new U. S. Bootees. Note their waterproof, smooth rubber surface—feel how pliable and comfortable they are—examine for yourself their wonderful built-to-wear construction.

Other "U. S." Models—all built for the hardest wear

Whether you prefer a boot or a bootee for the wet season, a "rubber" for general use, or a cloth-top arctic for the cold, you can find in U. S. rubber footwear exactly what you need. Tough, heavy soles—special reinforcements at toe and heel—and always the highest quality rubber—these points are winning U. S. rubber footwear thousands of new friends every year.

Ask for U. S. rubber footwear—it means solid wear and long service for your money.



"U. S." Boots—Reinforced where the wear is hardest

Made in all sizes and styles—Short, Storm King, Sporting, and Hip. In red, black, and white.



Ask for "U. S."

RUBBER FOOTWEAR

United States Rubber Company

Shall We Decrease Production?

[CONTINUED FROM PAGE 5]

same. There are thousands of farmers who could save days of precious time through the year by having a gasoline engine or windmill merely to pump water. Figure it up for yourself: A half hour night and morning, which is a modest estimate for a farm carrying much stock, is seven hours a week, or the equivalent of nearly 17 ten-hour days during the six busy months. Add to this the time lost on a great many farms in cutting wood by hand, shoveling corn to hogs that they might better eat from a self-feeder or the cornfield, spreading manure with hand forks, working land cut into small fields, tilling crops with one-horse walking cultivators, replanting fields because of untested seed, driving to town or the blacksmith shop in busy times for repairs that should have been made in slack seasons, looking for mislaid saws, hammers, and—but why continue? If the reader cannot make up out of his own experience a list of such time-wasting things totaling days enough to raise a good-sized corn crop, he is indeed an exception. I know that I could do so.

THE thing to do now is to get rid of every possible cause of profitless steps and wasted moments. Men who will reorganize their farms on that basis, and make use of every profitable piece of equipment within their reach, are going to hear considerable more of that pleasant rustling sound in the vicinity of the cashier's window when they go to cash the checks for their season's work. Don't forget this, that the more hopeless the situation looks for large aggregate production, the brighter it gleams for the man who can contrive to come up to his average, or beat it.

Thousands of farmers will put land that has been producing corn and wheat into grass. That adds just so much to the demand for your corn and wheat. Thousands more farmers will rush over their land with little help, and that little stretched out mighty thin as far as soil preparations and tillage go, simply because they will not invest in larger units of machinery, and reorganize their farms on a time-saving basis, and the result of that will be lighter yields. Every bushel less that they raise means a more eager market for yours. Then, too, a lot of land which was cropped up to the limit during war-time will have to be given a rest and be brought up, and a lot of overworked farmers who have rolled quite a flock of dollars into the bank door will settle down to an easier gait to give their weary frames a rest. Look at the situation thus presented from any and every angle, and it means just one thing—more money for the men who have more produce to sell.

And here and there are farmers who will contrive to get in on that practically certain and certainly just reward. I met a man yesterday who owns 120 acres of land, and who has rented an adjoining 160 acres—something he never did before. He has done it now in order to have enough land to make a tractor and power machinery pay. A few men are buying more land, but prevailing land prices are operating

against much such enlargement of line fences on the part of the conservative majority of farmers. In the average case, a maintenance or increase of production must depend on better management of the farm, and larger economy of such labor as is available, through the use of such increased equipment as the nature of the farm and the owner's finances justify. The American farmer is already the largest user of agricultural machinery in the world, and the present situation bids fair to make him an even greater one.

Fortunately, and to the contrary of what may often seem the fact, there yet is some labor to be had. Even the old-fashioned hired man—that sturdy iron-thewed individual who could and would do any known agricultural task with none of the unending instruction, oversight, and bribery so frequently needed with the modern hand—even he has not entirely disappeared. There yet are a few of him left, though such a pitiful few for the work at hand. One thing his scarcity insures, and that is a first chance at his labor for the man who treated him best in years gone by. There is a bit of compensation in that. And the situation is not hopeless for those who must take one of the small but largely assorted crew that has replaced so many of the old-type hired man of fond recollection. True, that same crew numbers about every sort of misfit from broken-down boiler-makers to Bolsheviks, but it yet contains a helpful sprinkling of young fellows who can be farm-broke and made mighty useful in the present emergency. I could tell you of farmers who have done very well with such help if I had the space.

TO SUM UP, the ill wind out of these clouds of high living costs, high labor costs, and labor scarcity will bring in a nicely laden little ship of private fortune for the man who can trim his sails properly. It will not be easy. It will mean headwork and handwork of the best sort, but after it is done you will get that deep down glad feeling which is distilled in a special corner of heaven for the righteous and the forehanded. And when the readjustment of city life to country life comes, as it must under the pressure of high living costs, when labor is again to be had in sufficiency and prices of farm products possibly decline, you can sit back and take it easier, with your farm all nicely equipped and likely paid for, blissfully conscious that you jolly well earned all you got by welding the iron real lively while it was cherry-red.

That is the bright side of the present situation. That is the size of the opportunity which some farmers are going to seize and profit by. I hope that you, friend reader, will be one.

If it were not for the men at the state colleges and the experiment stations, who study out what makes things grow and how to kill bugs and fight plant diseases, farming would be back where it was a hundred years ago.

For the Benefit of Any City Man Who May Read This Article

UP AND DOWN the asphalt, and simmering loudly in many a newspaper office, is the altogether erroneous idea that farmers are pretty much to blame for the cost of living. It should be clear to everyone that when we have gone through a great war which destroyed millions of the world's best working men, and which created a scarcity of all needful things by taking labor away from peace-time production, that we would naturally and unavoidably have high prices. But when on top of that we lure labor from the farm with high wages which the farmer must meet if he is to have any help at all, then put our greatly lessened labor supply on a basis of shorter hours, and hamper production by numerous strikes to get such hours, thereby increasing the cost of everything the farmer must buy—when we do that I say, it is idle and foolish to look for low living costs. The farmer cannot pay more for less labor and for what he buys, and then flood the world with cheap food.

He will do all he can, and employ every practicable aid of science, experience, and mechanics, but it isn't within his power to do his own work and the work of tens of thousands who have left the farm for more pay and shorter hours in town. It is neither humane nor reasonable to ask him to. Farmers are not magicians to call from the soil cheap food without effort. Food must be wrung from the earth with sweat and cost of labor. Those who left farms for cities know this, because it is why I left. Let all such, and all others who prefer the city's Dead Sea of roofs to the country's living oceans of green and gold, not complain if the Dead Sea's fruit is rather bitter with the high cost of living. It is largely fruit of their own growing.

And there is only one way to get rid of the bitter taste: city labor must go to producing as wholeheartedly as farmers do. Everyone must do his full share. That will relieve the shortage of a great many things, which is at the bottom of high prices.

W. J.



DIETZ

WAGON LANTERNS

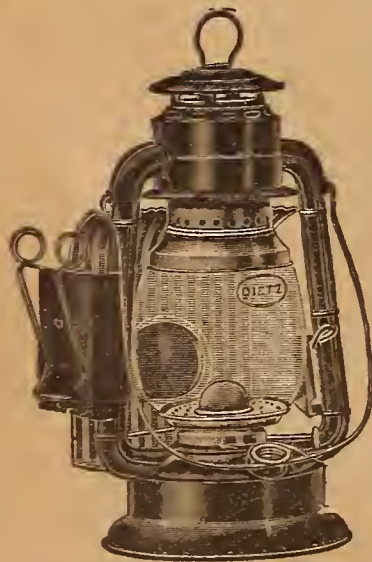
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DIETZ Wagon, Dashboard and Driving Lanterns are furnished in several styles and in varying sizes to suit every requirement.

All of these Lanterns are made of best grade, full weight metals and are strongly put together to stand up under the jolts and jars of hard service. All are generous light producers. The standard finish is black enamel.

The Lantern illustrated is the "Cold Blast" Dietz "Roadster"—a Lantern only 11½ inches high which gives a light of 10 C. Power. This Lantern and all other Dietz Wagon and Driving Lanterns, excepting Dashboard Lanterns, show a ruby light to the rear, affording protection from motor vehicles and complying with State Laws.

A good Wagon Lantern is essential for protection. Ask your dealer to show you his line of Dietz Wagon Lanterns.



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in 6 to 8 Weeks—Earn \$150 to \$400 a Month. The Rahe Practical Method gives best and quickest training. Big demand for our graduates everywhere because of greater ability. The success of 22,000 graduates proves superiority of our practical training methods.

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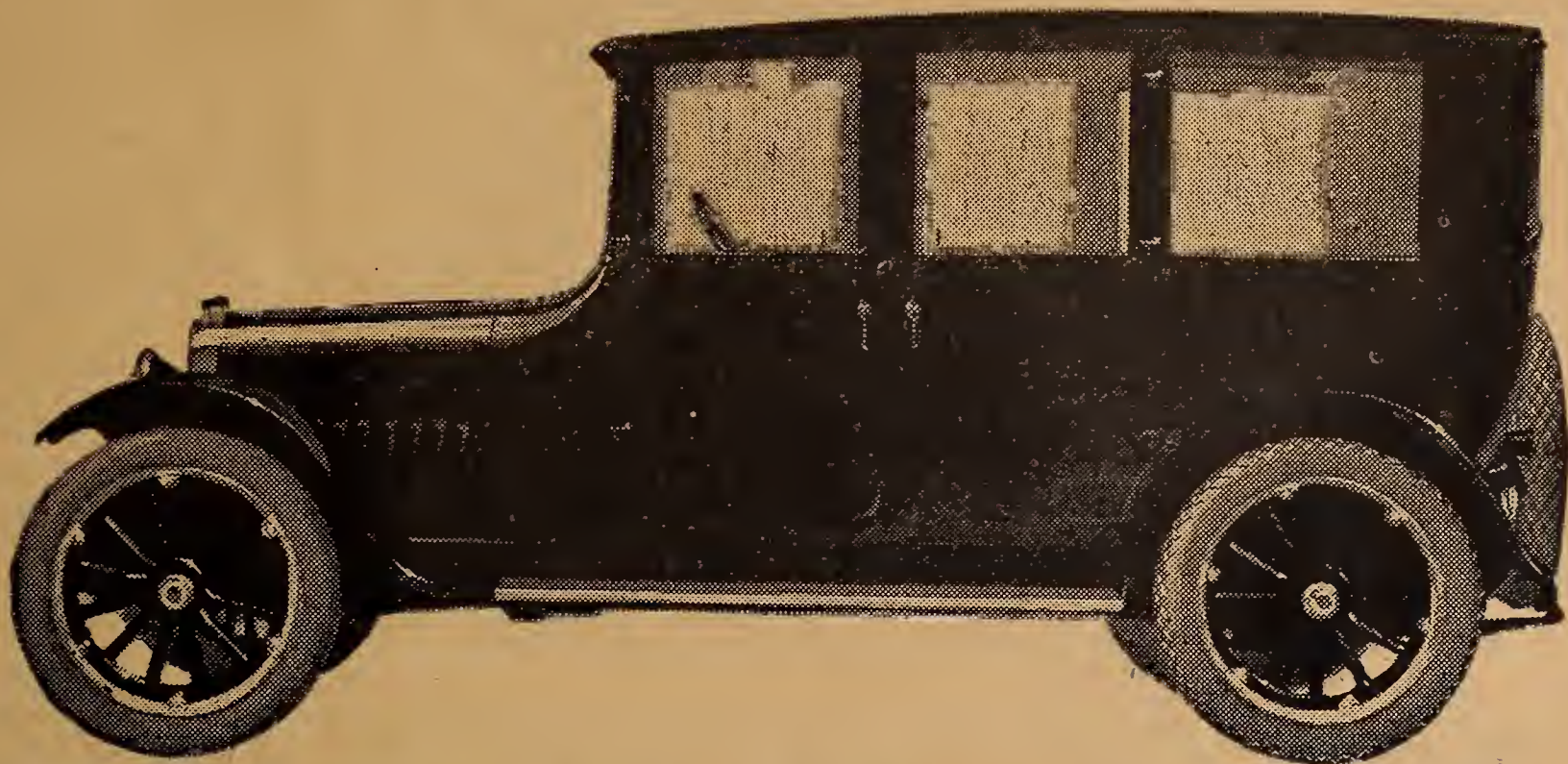
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KANSAS CITY, MO.





OAKLAND OWNERS REPORT RETURNS OF FROM
18 TO 23 MILES PER GALLON OF GASOLINE
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THIS NEW OAKLAND SENSIBLE SIX FOUR DOOR SEDAN IS POWERED WITH THE FAMOUS 44-HORSEPOWER, OVERHEAD-VALVE OAKLAND ENGINE

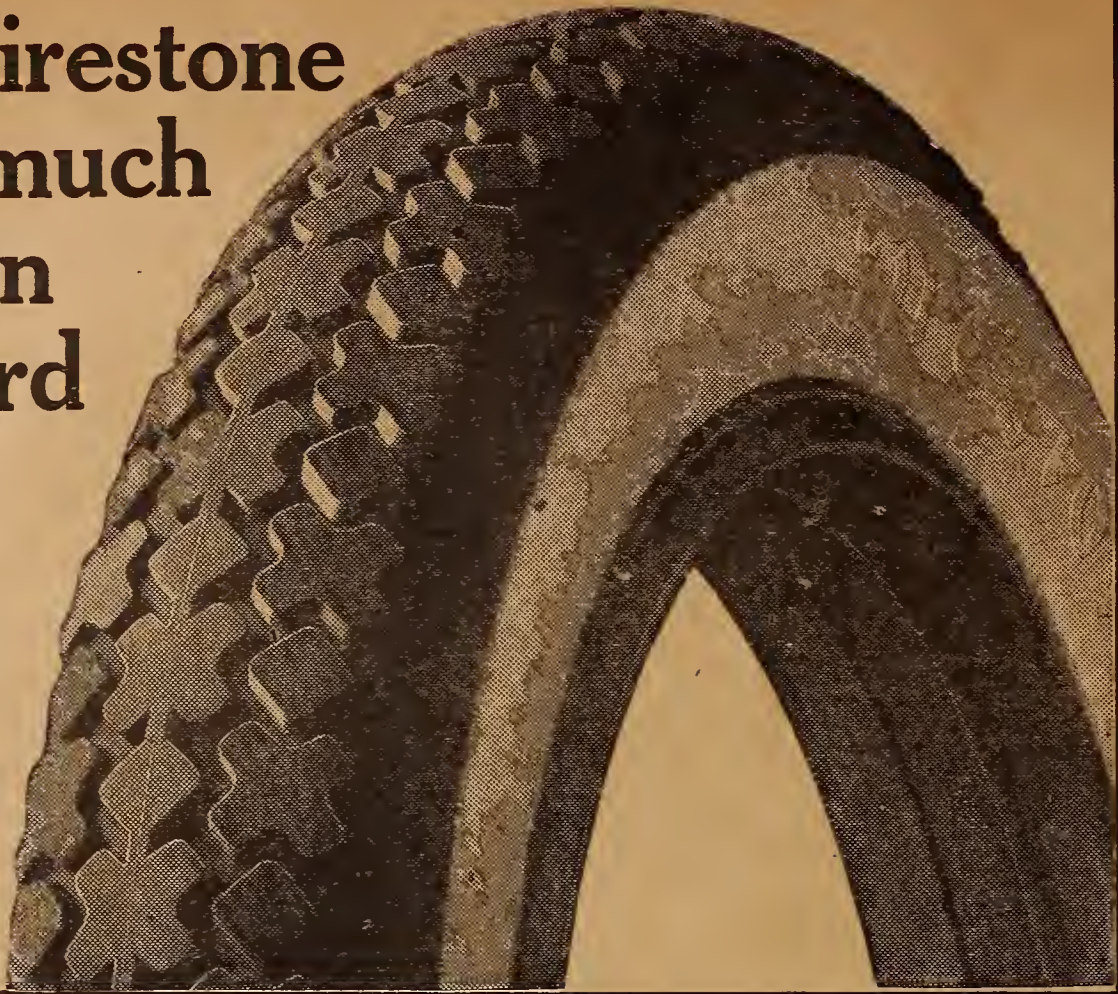
OAKLAND SENSIBLE SIX

ONE thing, above all others, singles out this new Oakland Sensible Six four door Sedan for especial consideration — that is its pronounced and unrivaled value. It is a car embodying all the comfort and reliability that ample size and sound construction can give. It is a car mechanically so efficient that, under all conditions, it delivers the maximum of service at the minimum of cost. It is a car so well and completely appointed that every essential convenience is included in its standard equipment. Yet the purchase price of this Oakland Sensible Six four door Sedan is relatively very low. The moderate investment it represents, and the fine and spirited character of the car's performance, combine in this Oakland to a value as conspicuous in the present market as it is unusual.

MODEL 34-C: TOURING CAR, \$1165; ROADSTER, \$1165; FOUR DOOR SEDAN, \$1825;
COUPE, \$1825. F. O. B. PONTIAC, MICH. ADDITIONAL FOR WIRE WHEEL EQUIPMENT, \$85

OAKLAND MOTOR CAR COMPANY
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Why Firestone gives much more in this cord tire



Most Miles per Dollar

THE dealers say there is no argument—the Firestone Cord, compared side by side with any other, sells itself.

No wonder. It is built to the largest standard oversize of the industry. It has much greater air capacity than the average. It contains much more material and it delivers extra mileage in proportion. The thicker, heavier tread, that looks and feels the part of its extra mileage, is another reason why it sells itself.

And that tread is as good as it looks from the standpoint of preventing skid, slide or spinning of wheels. It has a tractive power never before equaled in a rubber tread, yet it has no inclosed hollows or suction features to be a drag on speed or a drain on power.

*Specify Firestones; your dealer is ready
with just your size—Cord or Fabric.*

FIRESTONE TIRE & RUBBER COMPANY
Firestone Park Akron, Ohio
Branches and Dealers Everywhere

Firestone

Where You Can Get the Money to Buy the Farm

[CONTINUED FROM PAGE 11]

of the income of the farm, and not out of himself and his family, as under the old method.

Speaking of this arrangement, a member of the Federal Farm Loan Board recently said:

"The federal land banks are careful in these cases to look into the matter so as to assure themselves that the tenant farmer is not undertaking a load which he cannot carry. If the selling price of the land is regarded as too high, if the interest rate charged by the seller of the land is too high, or if the buyer is not given sufficiently easy terms on the second mortgage, so that he will have a fighting chance to pay off these debts, the federal land bank will not encourage the transaction. But they are always ready to co-operate with landowners and tenants on any basis which would give the tenant farmer a chance to become the owner of a farm.

"Landlords all over the country who are renting their farms are beginning to study the second mortgage, subject to a federal farm loan mortgage, as a possible means of enabling them to dispose of their land to the mutual advantage of themselves and their tenants."

A practical demonstration of how the plan may be worked out in large colonies is given in the instance of the 1,700 acres of manless land, two former sugar plantations in Louisiana, cut up into seventeen farms, each of 100 acres. The result is that these two unproductive plantations have become a source of revenue to the community instead of a burden in taxes and interest to the owners. Seventeen families are now farm owners on a stretch of land formerly badly tilled by tenants.

THIS project was perfected by two officers of the Jeanerette National Farm Loan Association, J. C. Clausen and I. S. Wooster, who, because of their farming and banking experiences, were able to make successful their progressive endeavor in permanent agricultural development. As a result, \$41,775 in checks were sent to the association by the Federal Land Bank of New Orleans, to be paid to the former owners, thus enabling the seventeen farmers to become established as farm owners.

As these seventeen farmers did not have the necessary money with which to purchase any of this land, and also as the Federal land banks make loans only upon first mortgages, it was necessary for some arrangement to be made for the payment of the amount loaned by the bank. The association arranged to finance the unpaid balances by second mortgages to be given by the seventeen owners on terms of seven annual payments at six per cent interest per year. They are in actual possession of the property, although not one cent of their own money has yet been paid.

The site chosen for this little colony of native farmers by the Jeanerette association lies on the banks of the Bayou Sale. The soil is fertile, surface level, with ample drainage. A railroad runs parallel to Bayou Sale on the east bank, and a modern gravel road is being constructed on the west bank. Telephone facilities have been established, a schoolhouse improvised, and a church is being provided for the seventeen families living on and working the farms, ten families being housed in laborers' houses.

Diversified agriculture has replaced the one-crop method on this land. The 17 farms were planted the first season in the following crops: 55 acres of cane, 319 acres of cotton, 992 acres of corn, 38 acres garden truck, and 240 acres pasture and woodland.

In the center of the colony is a 500-ton sugar mill, owned by the seventeen farmers jointly, and will be paid for out of the proceeds resulting from its operation. One of the farmers is a practical mill operator, and will manage this part of the work, receiving his pay for it from the sugar association.

These methods of aiding tenants to become owners of farms may be duplicated in any American farming community by men of vision, backed by the Federal Farm Loan Act and its desirable method of financing farmers. This includes the community in which you live.

A storm-bound motoring party asked an old mountaineer, chopping wood, if they might stay in his house overnight. "Ask the old woman inside," he replied. "It's all I can do to stay here myself."

—Ladies' Home Journal.

As low as \$10

\$10,000.00

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Cedar Rapids Speed Governor controls speed of all machinery like separator, churn, fanning mill, washing machine. Changes speed of any or all instantly while in motion. Fine for separators. Steady speed saves vibration and spilling. Insures closer skimming. Costs very little.

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Young man, are you mechanically inclined? Come to the Sweeney School. Learn to be an expert. I teach with tools not books. Do the work yourself, that's the secret of the **SWEENEY SYSTEM**

of practical training by which 5,000 soldiers were trained for U. S. Government and over 20,000 expert mechanics. Learn in a few weeks; no previous experience necessary.

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cost less; outlast three ordinary roofs. No painting or repairs. Guaranteed rot, fire, rust, lightning proof.

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Send for book, "How to Run the Gas Engine, Simplified"—you need it. Mention dealer's name; address

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Do You Know Hudson

*But Through Sheer Merit Alone
Essex Made Its Thirty Mil-
lion Dollar Sales Record*

Builds the Essex?

Essex success has not been accidental. No one doubts its right to the position it holds.

But how many know why Essex in its first year revealed qualities more mature, more evident of the influence of long experience, than is commonly found in cars even in their third and fourth year.

You will recall the Essex was announced one year ago without one word as to the identity of its builders. Not a claim was made for its performance.

You were asked to go look at it, take a ride and form your own opinion. The Essex, we said, would have to speak for itself.

Now that it has established itself, we reveal why Essex has all the qualities of cars of long development.

Was Designed by Hudson Engineers

They conceived it as they developed the Super-Six. All they learned about endurance, they incorporated in the Essex.

They gave to the Essex the power that has made it famous in all quarters. Its speed is the result of what had been learned in making the Super-Six winner of all worth while speed records.

The Essex can never be all that the Super-Six is for they are totally different types.

But the Essex does bring quality and performance to a class field that was unknown.

The former owners of large costly cars that have adopted the Essex have not been Hudson users. They have come from other cars, cars that fall short of the Super-Six in all particulars save size and cost.

The Essex appeals to such users because of its nimbleness. They like the way its performance compares with that of the Super-Six. You can see this on every hand. The two cars in any community that are most prominent because of their performance ability are the Hudson Super-Six and the Essex.

Essex Did Not Need Hudson's Endorsement

Think of the advantages Essex has had. What ordinarily would have required years to perfect was made possible in the very first model.

That is why 20,000 are now running, why more than \$30,000,000.00 was paid for Essex cars in ten months.

You have not needed the Hudson endorsement to understand Essex performance.

Essex has won its own way. Hudson gave it full benefit of the experience of its engineers and the ability of its manufacturing organization. Its name was not needed.

Now Hudson takes the same pride in acknowledging its kinship to Essex that a father might in speaking of his son who on his own account had made good.



Don't Take Chances with Wet, "Skiddy" Pavements!

Practically all tires with any sort of raised tread are *claimed* to be non-skid these days. But—

**The Vacuum Cup tread is GUARANTEED
not to skid on wet, slippery pavements!**

Add to this assurance of safety the proved highest quality of Vacuum Cup Cord Tires, their generous oversize, and the fact that they are *guaranteed*—per warranty tag—for 9,000 miles, and you will know why they represent *downright economy*.

Yet you pay only a very reasonable price for this supreme *quality*—the *safety* costs you nothing.

Makers of Pennsylvania Auto Tubes "Ton Tested"

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TO GET THE BEST RESULTS

from your horseshoeing use "Capewell" nails. These nails do not split or crimp and thereby injure hoof or foot. They hold the shoe tight until the growth of the hoof makes re-shoeing necessary.

Not a "cheap," regardless of quality nail, but the world's best at a fair price.

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Hartford, Conn.

The Blue Grass Farm Kennels, of Berry, Ky. offer for sale, Setters and Pointers, Fox and Cat Hounds, Wolf and Deer Hounds, Coon and Opossum Hounds, Varmint and Rabbit Hounds, Bear and Lion Hounds, also Airedale Terriers. All dogs shipped on trial, purchaser alone to judge the quality, satisfaction guaranteed, or money refunded. Sixty-eight page, highly illustrated, instructive, and interesting catalog for ten cents in stamps or coin.

GET Your Cream NOW! Separator

**ONLY
\$2 Down
A Year to
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You won't feel the cost at all. The machine itself will save its own cost and more before you pay. We ship any size separator you need direct from our factory and give you a whole year to pay our low price of \$38 and up. Read what Alfred Geatches, North Jackson, O., says: "We are getting more than twice the cream we were before. The separator is very easy to clean and runs very easy." Why not get a fully guaranteed New Butterfly Separator for your farm and let it earn its cost by what it saves?

New BUTTERFLY

**EASY
TO
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Cream Separators have these exclusive, high-grade features: Frictionless pivot ball bearings bathed in oil—self-draining bowl—self-draining milk tank—easy-cleaning one-piece aluminum skimming device—closed drip-proof bottom—light-running cut steel gears, oil bathed. Guaranteed highest skimming efficiency and durability. We give

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against all defects in material and workmanship. We ship you the size machine you need and let you use it for 30 days. Then if pleased you can make the rest of the small monthly payments out of the extra profits the separator saves and makes for you. If not pleased, just ship the machine back at our expense and we will refund what you paid. You take no risk. Write for FREE Catalog Folder now.

ALBAUGH-DOVER CO., 2189 Marshall Boulevard, CHICAGO



Why This is a Good Time to Make Repairs on Your Car

By Lester G. Herbert of New York

MANY thrifty car owners plan to have their motor-driven vehicles overhauled during the winter, when there is the least temptation to drive, and when the car can be spared best. One of the advantages of this is that garage mechanics are not likely to be hurried, and so better attention can be secured at this time.

When an engine has done good service it is good economy to have it gone over thoroughly, every worn part replaced, loose parts tightened up, and the entire construction put in "apple pie" order at least once a year. To run an engine as long as it will go is a mistake. The valves should be ground, loose connecting rods tightened up, wheels properly aligned, steering gear tightened, and worn bushings or broken ball bearings replaced.

The most satisfactory way to use a car is to have the mechanical part as correctly adjusted as a fine watch. To give it timely attention is really a saving of unnecessary repair expense, and prevents over-rapid deterioration. It is decidedly better to have an engine taken down and put in first-class condition than to run the risk of accident or to be subjected to the continual annoyance of frequent tie-ups and repairs.

Many a perfectly good car from the mechanical standpoint grows shabby in outward appearance when the finish becomes streaked or marred, or top becomes faded and the upholstery worn. Repair work of this kind takes time, and refinish jobs need a period for hardening. The best plan is to have such work done in winter, when there is little dust flying.

There are various types of refinish jobs. It is safe to say that a cheap job seldom gives satisfaction. A man who is equipped

to do the work, and who will guarantee results, is the most economical man in the end. Get him to estimate on the work which *ought* to be done, and what he will charge for doing it thoroughly, for doing a fairly good job, or doing it so that it will just get by.

Often times refinishing the wheels, touching up a few scratches on the body, and refinishing the fenders will work wonders. It is not expensive to have the top dyed or redressed, and to permit windows to remain out is shiftless in the extreme.

New rugs for the car floor or well-made slip covers will all help to put your last year's "flivver" into satisfactory condition for another season.

Usually the most satisfactory way is to have an expert do the necessary work, whatever it may be, but if it is possible to warm the garage a good deal may be done by a handy man on the stormy days when other work does not press. One man used an ordinary, rather small-sized, double-boarded barn for a garage. He watched his opportunity and bought a fairly good second-hand furnace, and set it up with little trouble. In this he has a giant stove that will heat the place up quickly and with little fuel. Here he worked on his car, truck, and tractor, and soon saved much more than the price of the furnace he bought. A couple of heating pipes were extended to the floor above, and here he did lots of repair and repaint jobs on other farm machinery, getting all of it in shape for the coming spring.

Winter repairs on the car should be carefully planned. It is poor policy, for example, to paint and then overhaul the engine or adjust some mechanical part, for the finish is sure to become marred.

How He Beat the World With Wheat

THE man in the picture is Seager Wheeler, the wheat wizard of Rosethorn, Saskatchewan, who won the world's prize for the best half-bushel of hard spring wheat, duplicating his victory of 1918 by again winning the first prize and sweepstakes at the International Soil Products Exposition held at Kansas City, Missouri, September 24 to October 4, 1919.

Six times the famous "wheat king" of Saskatchewan has competed for the world's wheat sweepstakes, and six times he has won, over scores of other contestants.

Seager Wheeler was born on the Isle of Wight in 1869. When he was a boy he often dug out of the sand on the seashore many interesting relics of the time when the Armada sailed to England and pirates visited its shores. His one great ambition was to be a sailor. He graduated at the early age of eleven from the National School.

After he was graduated he started to work at a newsstand. He tried to get into the navy, but was told that he was "an inch too short up and down, and an inch too short around," so he decided to become a farmer, and as soon as he could get passage he came to Canada.

In Canada, Wheeler had an uncle who lived in a log house on the bank of the Saskatchewan River, near Saskatoon, Saskatchewan. After two years of farm labor, Wheeler went to Moose Jaw to work at construction work, but finding this not to his taste he went back to Clark's Crossing, and took up a homestead on the Saskatchewan River. From the first he picked his seed grain by hand. He heard of some land near Rosethorn that was for sale. He bought it at \$3 an acre, and moved there. He grew Red Fife wheat at first, but soon saw the need of a wheat that would mature earlier, and have the same good milling qualities as Red Fife.

He went through his crop year after year, selecting the best and earliest heads. He worked in the fields all day, and spent half the nights in selecting kernels and writing down comparisons and data. Other farmers who observed how he put in his time thought he was a little bit "off." Many times he was greatly in danger of losing his farm, but his live stock saved him. By this time he had given up trying to grow Red Fife, and had turned his attention to Preston wheat, as it matured much earlier than Red Fife.

L. H. Newman, secretary of the Canadian Seed Growers' Association, paid him a visit in 1907, and showed Wheeler easier and more effective methods of selecting and raising grain. The ordinary Preston wheat was not fixed to a distinct type, so he separated the different strains by hand. In 1911 he entered his first exhibits at Regina, and won several prizes. The same year Dr. Saunders sent him five pounds of Marquis wheat. In the fall he selected the best two bushels of his wheat, and entered them in the New York Land Show. He won the \$1,000 in gold offered by the Canadian Pacific Railroad for the best hard spring wheat grown on the continent. Since then he has had no peace—reporters,

photographers, and special writers swarm around his farm; letters and telegrams of congratulation pour in from all quarters.

A complete list of the victories won by Wheeler with his wheat, oats, barley, potatoes, and other crops would require too much space to print here, but it includes the world's championship on wheat for the years 1911, 1914, 1915, 1917, 1918, and 1919, and in addition many other valuable prizes.

The whole secret of his success, Wheeler says, is good seed, good tillage, and a soil and climate naturally suited to the production of cereal crops.

C. P. B.



Seager Wheeler, six times world champion



General Motors Trucks

SOONER or later you expect to get a motor truck for all-around farm use.

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It was standardized by the government for all military work in the $\frac{3}{4}$ to 1 ton class. Any American soldier in the late war can tell you of its record.

We have yet to find the first dissatisfied user of a GMC Model 16.

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Thousands of GMC trucks are in service in all kinds of business. GMC dealers and service stations are to be found in every state in the union.

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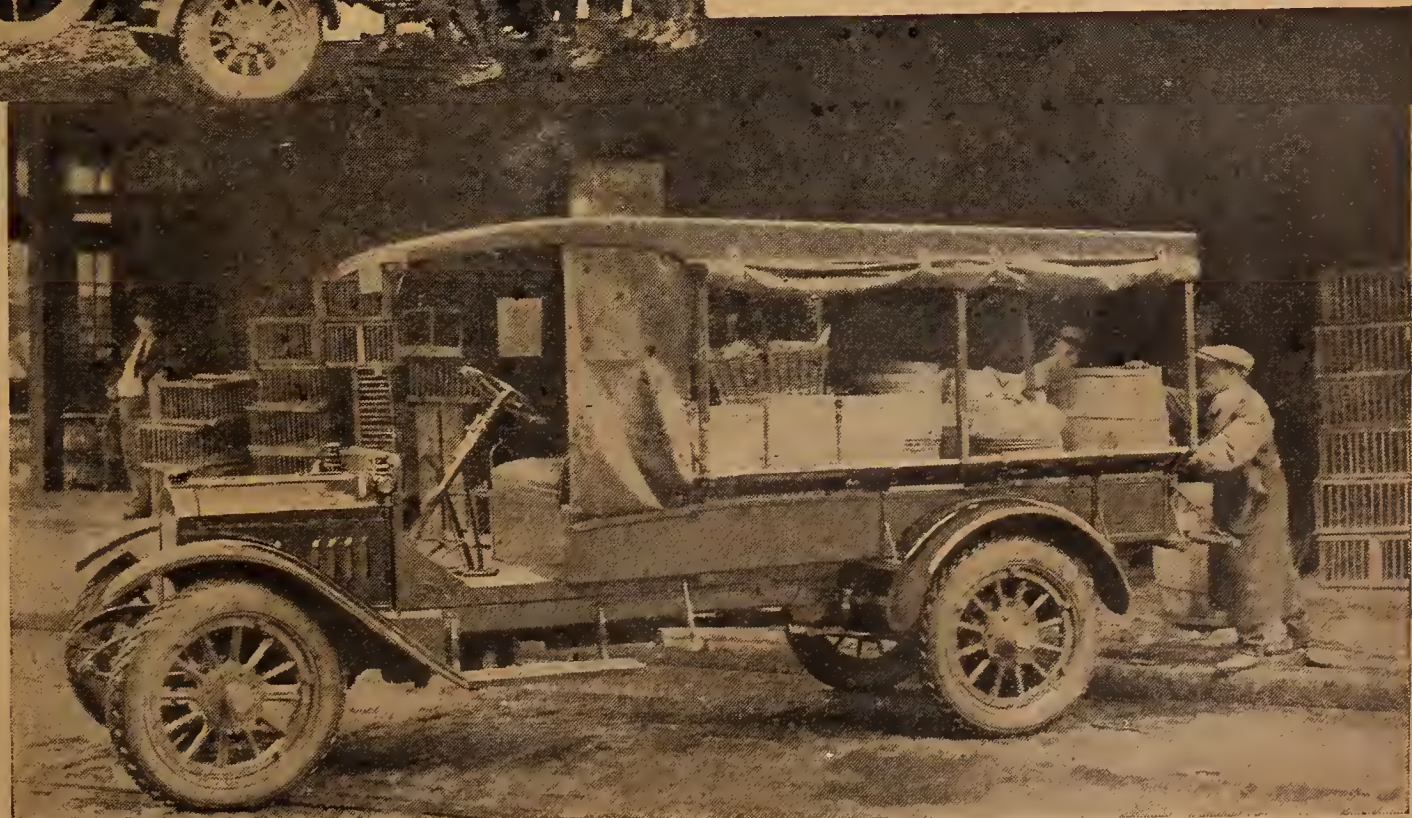
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Prosperity Follows the Motor Truck

To convince yourself of that fact, note those of your neighbors who have equipped their farms with motor trucks. You know that they are making money—big money—almost without exception.

What is the real basic reason? The answer is, the business ability and business common sense of these truck owners.

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Let us tell you in detail about some Federal achievements on the farm—specific instance after instance in which the Federal has added to the happiness and prosperity of farm-business men.

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BEGIN your spring car-overhauling by putting in a set of Champion Spark Plugs. It is the first step in insuring trouble-free engine performance for months to come.

Champion Dependable Spark Plugs are recognized everywhere for their unfailing reliability and endurance. Our famous No. 3450 Insulator and Patented Asbestos Gasket Construction make them proof against the intense heat and vicious shocks of constant cylinder explosions.

There is a Champion Spark Plug for every type of engine on motor cars, trucks, tractors, motor boats and airplanes.

Buy Champion for service. Be sure that the name Champion is on the Insulator and the world trademark on the box.

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Champion B43, Price \$1.25
Specially adapted for High-Powered Cars, Trucks, Tractors and heavy service work.



What I Learned About Myself

(CONTINUED FROM PAGE 14)

of the first fall!" The first time that you violate your own conscience, the first time that you do what your sense of the ideal frowns upon, you have made a groove in your soul, and, in spite of you, sooner or later your action will slip again into that groove. The oftener the groove is used the harder it is to keep out of it.

Why do we do it? A great many puzzling things are done because of men's pride, of their love of the approval of their fellows. Call it ambition, it is all the same. I know that I learned to smoke cigars because it seemed to me that by so doing I put myself into a class of young men older than myself whom I admired. They were worldly, they dressed well, they were not bashful and awkward as I was. I felt that to be like them, to be unafraid and unashamed, and to be able to talk easily with girls and to be admired by girls were the things most to be desired of anything in the world. To learn to smoke seemed the first step. Therefore I learned, and, curiously enough, the act of holding a cigar in my mouth seemed to put me nearly in the class of these older men. So I smoked until another class of men and women, a class that I admired yet more, showed to me their disgust and disapproval of it.

THERE are ideals that spring up from the inner man, no doubt; but, depend upon it, most of our ideals are borrowed ideals. The young man has a lot to answer for because he is worshiped by the boys below his age. Ten times stronger than his father's advice is the example of that older boy who has the admiration of his own lad. So we do it because we want to be thought brave and manly. There is nothing in the world more valuable than ideals, for they lead men.

We do things because men whom we admire do them. An illustration of that: One day a few weeks ago I was in Kentucky on a special train preaching the growth of alfalfa. The work was hard, wearing, too hard altogether. I was conscious that I was working too hard, getting too tired. Toward the last I felt inclined to flunk, to say, "It's no use, I am done. The audience may go to the devil." I had sufficient reason for feeling that way, too. The route was twice as long as I had agreed to go on. Nearly all my help had gone, and I was left with the heavy end to carry, and, as I have said, I was very weary. Just then I happened to remember Teddy Roosevelt—how he gloried in work, how nothing was too hard for him to do. I thought how he would probably enjoy the very work that I was doing, and how he would welcome each fresh audience as a new opportunity to do good, and then I grew ashamed of my fatigue, and went at it again nearly as strong as ever.

That is an illustration of the influence of external forces. The inner man of me was beaten, ready to retreat, a coward. Then there came the rallying thought, "This is cowardice, this is to be ashamed of, be a man, be as much of a man as this President, whom you loved and admired." And that helped me out. So we do things that are not just natural to us, that are better than is in us, because of the influence of other men whom we admire. Therefore I am a believer in hero-worship. I wish I knew just how long Teddy could go on when he was weary before he would insist on having rest. And I wish that I knew whether he had in his mind and heart the image of someone else whom he admired and who prompted him to do things better than was natural for him to do! [Roosevelt did have such an image in his mind—the image of Abraham Lincoln. He mentions this fact in his autobiography.—EDITOR.]

There come times, I hope, in every human soul, every soul at least that is not warped and twisted and imbruted by appetite and hatred and lust, there come times when all at once there is a feeling: "Why, I am a part of this wonderful world, I am one of these wonderful beings that we call men. There is so much of beauty in the world,

there is such joy in comradeship, there is such possibility of goodness and of kindness in me and in all men. Why, I must set out to see what I can do to do my part in this world, to make it as happy and as pleasant and as clean as it may be." And that is the time when you give the hearty handclasp to your friend whom you feel to be despondent, the smile and goodly greeting to the old man whom you know to be stumbling toward his end, the smile and merry word to the little child whom you meet, you feel that it is worth while to kick the stones out of the path and to stop to uproot weeds and plant trees and flowers.

This thought, this uplift, this hope is all that can redeem man and lift him up from the level of the intelligent brute. This feeling that after all we are a thought of God, a part of God, that this good, sunny, showery, growing, blooming world, while we may never understand it, it is all for us.

Fear drives us to do some things, no doubt; but love and dawning understanding should cause us to do many other things, and much more worthy. Love and faith will prompt us to do the best things in the world.

If I might go backward a little here I would say what a misfortune it is that men have lost so many of their old beliefs! Do you remember that strange old man, Johnny Appleseed, who wandered in the wilds of Ohio, with his uncouth attire, wearing a mush pot for a hat on his head, carrying on his back a bag of apple seeds, in his inner pocket a copy of the New Testament? Do you remember how he visited all the pleasant valleys where some day men would come to dwell, and with prophetic insight planted apple seeds and surrounded them with brush fences? It was in a day when Indians abounded, and they scalped whom they would, but they never touched Johnny Appleseed. He had no fear of wild man or tempest or hunger. He went calmly through the forest, planting his apple seeds and tending to his little nurseries. Some days he would come to the cabins of the settlers, and there he was ever welcome. He would sit at table with them, and after the repast he would tell to them, the rough men, the homesick women, the wondering little children, to all of them he would tell the wonderful story of a Man who was God, and who came to earth to dwell and to teach men to love and not hate, to plant and not tear down, to forgive and be kind, and compassionate one with another. Then he would pray with them to that Son of God who to him was so real, his guiding star, his reason for doing, and after that he would leave them to go on his way to others needing him.

WHAT a truly great man! How much greater than many a general who for his wars has monuments piled high? What made him so great? That feeling of his being a part of God, of having some of God's work to do, that joy in doing what he conceived to be the work of the Master. I say to you, my friends, that if ever any one of us becomes a great man it will be through the adoption of an ideal like unto that which old Johnny Appleseed served. We will see a light, somewhere. Oh, there are as good chances of service as ever there were. And we will follow it as wise men followed the star. We will dream, somehow, and make it come true as did Joan of Arc, so long ago. There are as great things to be done as have already been done. There is call always for volunteers to do them. There is right there on your own farm work to be done. There are ideals to be held up, there are younger boys going out from your place to be men, and girls going out to be women. It is for us to tell them the story of the meanings of life, to awaken in them the highest ideals and the holiest purposes. There is not one of us here but has his influence. It is true, of every one of us, that others are doing things because of what we are. It is a startling thought, a solemn thought, when you come to think it over.



Safeguarding Your Prosperity

ALWAYS remember:—Your soil is your farm. As you look out over your broad acres, bear in mind that your measure of farm prosperity is dictated absolutely by those few inches of fertile soil-depth that feed your animals and bear your crops.

Your soil is your farm—and if this soil could talk to you, the first word of its cry would be "FOOD!" Regular even feeding of nature's greatest soil food—manure.

Are you efficiently safeguarding your prosperity? Do you fully appreciate that

this greatest soil-life sustainer is a *perishable product*—and that unless it is spread regularly, as made, and spread evenly and uniformly, it cannot possibly do its best work for you?

Why not decide—*right now*—to put an end to soil-starvation on your farm for all time. Decide today to start spreading *regularly*—with the New Idea

—the choice of big-crop farmers everywhere—the perfected product of the inventors who first discovered the successful method of applying manure in a thin, uniform blanket—the product of an or-

ganization that has *specialized on spreaders* for 20 years and has a chain of service branches throughout America.

The tremendous resources of this spreader-specializing organization, its modern factories and great annual output,

make possible greater spreader value for your money and guarantee an absolutely dependable spare parts service.

Your soil is your farm! Play fair with it—by spreading all of your stable manure direct to your fields the year round. *And play fair with yourself*—by selecting the *genuine* New Idea—the simplest, strongest and best spreader that money can buy!

See your New Idea Dealer today. And write for our famous book, "Feeding the Farm," packed with fertilizing facts of inestimable value to the farmer.



NEW IDEA

Straw Spreading Attachment

WHY buy a separate straw spreader when you can have both a manure and straw spreader in one?

This simple attachment—for old machines, or new—allows you to handle a big load of straw, shredding it fine and spreading it evenly eight to ten feet wide. Only a few moments' time required to attach it. Simple, light and compact, it takes up little space when not in use. Let your New Idea dealer show you.

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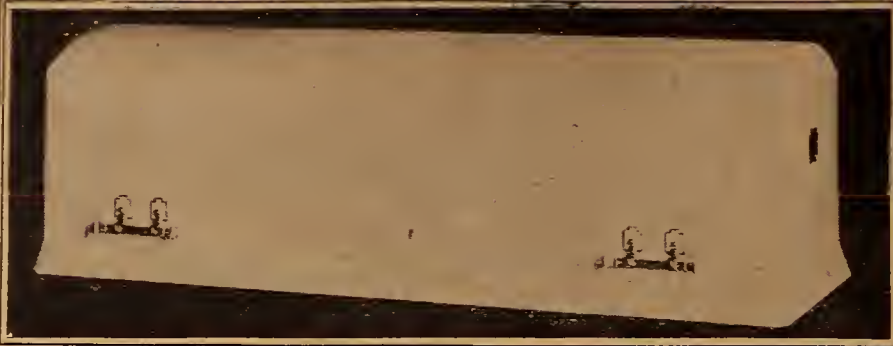
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"That They May Rest in Peace"



The Clark Grave Vault

No comfort is greater than the thought that the last rest of our loved ones is perfectly protected. Yet it is common knowledge that the grave is never dry.

Vaults of cement, stone or brick are porous so that seeping water soon penetrates and stays within their walls. And steel vaults sealed with rubber or soft metal gaskets cannot long withstand underground conditions.

The Clark Grave Vault is designed and built to keep contents permanently dry. It is a hood of heavy Keystone copper-bearing steel that keeps water forever out by resistance of the air within. Every vault is tested by complete submersion in water. Even with the bottom open and 5000 lbs. of water pressing up from below, no air escapes or water enters. For that reason Clark Vaults are guaranteed air and water-tight for fifty years.

Beauty --- Dignity --- Safety

The Clark Grave Vault's superiority of material, construction and finish has won it a reputation as THE QUALITY VAULT. It has given satisfaction for 20 years, and is sold by conscientious undertakers. Thousands of disinterments prove that the Clark Vault never fails.

Booklet of disinterment affidavits and pictorial proofs sent on request. Address Dept. B 19

The Clark Grave Vault, Co.

Town and Starling Sts.

Columbus, Ohio

Although mud and water were dipped from grave after three feet of digging casket was kept in perfect condition during six years burial.



The Cheapest Way To Pull Stumps

No horses needed with a Kirstin Puller—no extra help required. One man alone pulls biggest stumps in 4 to 10 minutes. The wonderful Kirstin One-Man Puller pulls little, tough or green stumps as low as 5c each; also brush, hedges and trees. Cuts land clearing cost way down. Costs less to buy—less to operate. Weighs less—has greater strength—more power.

Thousands of Kirstins Now in Use!

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Tells how to clear land quickly and economically. Guides you at every point. Worth many dollars to any farmer. Also get special proposition.

Kirstin One-Man Stump Puller

Works on wonderful leverage principle—gives one man giant's power. Its six speeds and patented cable take-up save time, cable and machine. All steel—three years' guarantee against breakage. Pulls acre from one anchor.

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Sold on 30 days' free trial—no money in advance. One man style or HORSE POWER. Shipment from nearest distributing point saves time and freight. Write for FREE BOOK and Special Agent's Proposition—TODAY.

[A. J. KIRSTIN CO., 2106 Lud St., Escanaba, Mich.]

World's Largest Makers of Stump Pullers!

Save 25% on Roofing

CENTURY Rubber Roofing is sold direct from factory to you. Best and cheapest in America. Long guarantee. We pay freight. Send for samples, catalog and bargain prices. **FREE** Write today.

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NINE MONTHS TO PAY

Immediate possession on our liberal Easy Monthly Payment plan—the most liberal terms ever offered on a high grade bicycle.

FACTORY TO RIDER prices save you money. We make our bicycles in our own new model factory and sell direct to you. We put real quality in them and our bicycles must satisfy you.

44 STYLES, colors, and sizes to choose from in our famous RANGER line. Send for big beautiful catalog.

Many parents advance the first payment and energetic boys by odd jobs—paper routes, delivery for stores, etc., make the bicycle earn money to meet the small monthly payments.

DELIVERED FREE on Approval and 30 DAYS TRIAL. Select the bicycle you want and terms that suit you—cash or easy payments.

TIRES lamps, horns, wheels, sundries and parts for all bicycles—at half usual prices. **SEND NO MONEY** but write today for the big new catalog, prices and terms.

MEAD CYCLE COMPANY
Dept. D-83 Chicago

"Don't Grumble!" Says She

THIS is the way some farm women in the South are making more money and getting ahead: Better quality and better selling with their butter has enabled the women in a number of communities to double their receipts. The home demonstration agents have helped them organize into butter clubs. These clubs market their produce co-operatively and the quality of the products sold through them is guaranteed by the members. One of these clubs is in Neshoba County, Mississippi. It hasn't been able to meet the demands for its butter this year. It has supplied three markets with about 40 pounds each week. With the local market price at 20 to 25 cents a pound last July, this club was receiving 55 cents a pound by shipping.

"Don't grumble because you haven't conveniences and improvements in your home. Get busy canning and buy them." A Florida woman gives that advice. That's the way she got what she wanted. Two years ago the home demonstration agent taught her how to can. She made enough money that year to buy a gasoline engine which she uses to run the washing machine, and furnish power for the water system. In 1918 she sold 2,000 large cans of tomatoes, and built two more rooms on her home. She bought paint, and applied it herself, inside and outside the house. Last season she had a standing order for 4,000 cans of tomatoes, and she plans still greater improvements in her home.

What the Road Past Your Farm Means to You

[CONTINUED FROM PAGE 21]

about 20 cents per ton mile, a saving of 17 cents or a total annual saving of \$43,400. If it were possible to apply this toward the payment of interest and principal it would be sufficient to retire the bond issue in about seventeen years.

The average school attendance before the roads were improved was 72 per cent, while following the improvement, it was 81 per cent. Several schools having been consolidated as a result of better roads, and these changes have resulted in a saving of teachers' salaries, and at the same time giving the children better educational facilities.

EDITOR'S NOTE: In his second article on good roads Mr. Yocum will take up different methods of road-financing, and point out which system has worked the best from the standpoint of getting the most road service from the least outlay of money.

Five Things You Can Do to Keep Hog Cholera Off Your Farm

[CONTINUED FROM PAGE 9]

methods used in selling them, swine owners should avoid needless losses both in money and in hogs.

The Department has authority to insist on the products being properly labeled, but even when that is done the follow-up literature and other supplementary advertising sometimes makes false or misleading claims. In reading such literature it is well to consider with caution any statement which makes claims that are more definite or more sweeping than the label on the package of the product indicates the product will do.

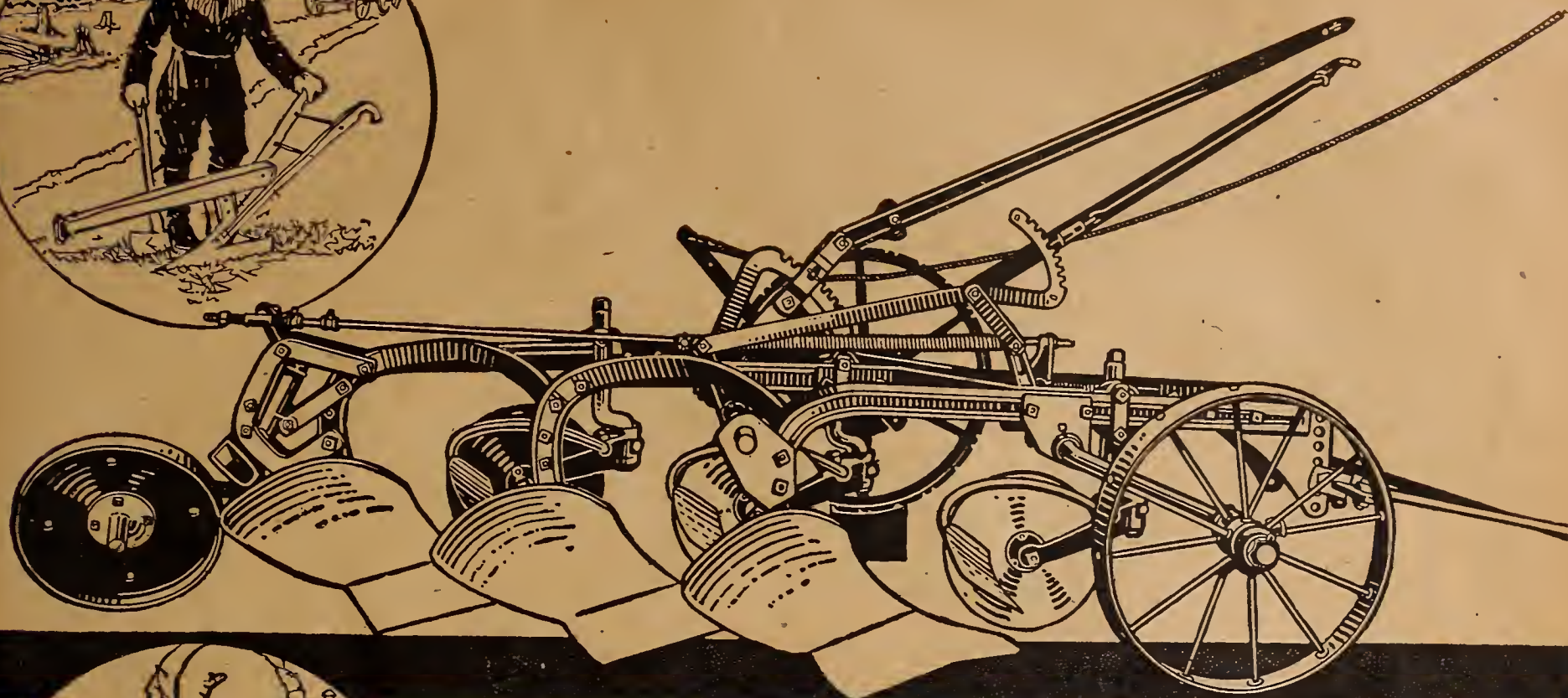
Anti-hog-cholera serum is the only recognized preventive treatment at the present time. It is not a cheap treatment, but it is less expensive than cholera losses.

The treatment is dependable, but because of that we must not ignore the very important matter of sanitation. Keep the hog pens and lots free from refuse, trash, and stagnant water in which cholera infection may lurk. Ten or fifteen dollars spent in cleaning up the hog premises, and disinfecting them, may avert the need for spending a larger sum for inoculating the herd. Briefly, sanitation should come first; then proper inoculation when the danger is near. With such a policy every farmer can make his hog-raising operations safe from cholera.

NOTE: If, after reading this article, you want the government bulletins on any phase of hog cholera control, or if you want the address of your state cholera control officials, write to the Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City, enclosing stamped self-addressed envelope, and we will see that you get the information. EDITOR.



1837



1920

83 Years of Experience Produced this Plow

AWAY back into the years goes the history of John Deere Tractor Plows—back to the days of Andrew Jackson, when the first John Deere Plows enabled the pioneer farmers to make good seed beds in difficult virgin soil. It is a history of continued plow-making leadership—of increasing success in finding out what would best serve the farmer and in building plows to meet the requirements. That kind of experience always counts. And there is plenty of proof of it today in the success of

JOHN DEERE TRACTOR PLOWS

In every farming section these plows are increasing the long established reputation of John Deere Plows for giving the user the greatest final returns on his investment. They meet the requirements of successful tractor plowing, just as John Deere horse-drawn plows meet the requirements of their type.

Equipped With Genuine John Deere Bottoms—They have an established, world-wide reputation for good scouring, good seed-bed making and long life. Hardened soft-center steel, chilled or combination bottoms can be furnished. You can get John Deere bottoms in the shape and type to meet the requirements of your soil.

Quick Detachable Shares on John Deere Tractor Plows are strong and close-fitting. Simply loosen one nut to remove the share. Tighten the same nut and the share is on tight.

Beams Are Guaranteed Not to Bend or Break, and there is no time limit on this guaranty. The heavy beam braces are long-lapped and are securely joined to the beams with heavy bolts and lock washers. John Deere Tractor Plows keep their alignment.

Simple, Strong and Positive Power Lift raises the bottom high and level. Lifting mechanism moves only when plow is being lifted or lowered—practically no wear.

Work With Any Standard Tractor—The hitch is widely adjustable up and down or to the side.

Three Sizes—John Deere Tractor Plows are made in two-bottom, three-bottom and four-bottom sizes, with 10, 12 or 14 inch bottoms.

See These Plows at Your John Deere Dealer's Store—There is a John Deere dealer near you. He will be glad to show you John Deere Tractor Plows. It will pay you to investigate them. Remember, good plowing will be your object when you operate your tractor-plowing outfit. That's why plow quality counts so much. You need the best plow you can buy. Be sure to see John Deere Tractor Plows.



Here's a Booklet You Should Have

It's full of good information for the man who needs a tractor plow. Send for your copy today. A post card will bring it to you. Address John Deere, Moline, Ill. Ask for Booklet FS-1

JOHN DEERE



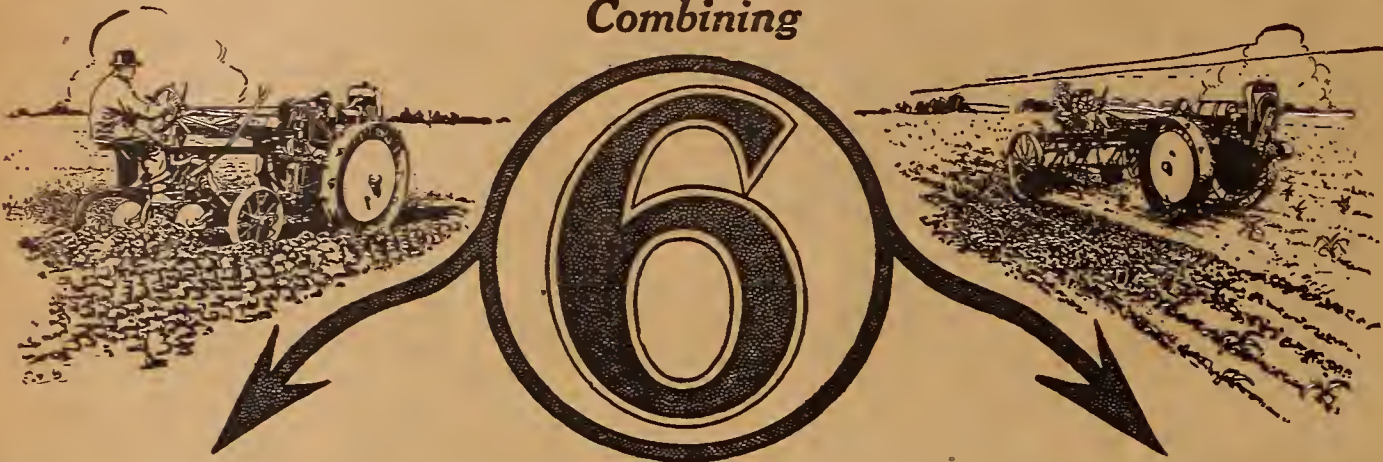
THE TRADE MARK OF QUALITY MADE FAMOUS BY GOOD IMPLEMENTS

SIX TESTS FOR A FARM POWER-PLANT

There are many tractors, but
the *Moline Tractor is Universal*

It is THE ONLY FARM POWER-PLANT

Combining



Exclusive Features

1. Does all field work, including cultivating, harvesting and belt work
2. One man completely operates both tractor and all implements
3. A single seat in the center of all controls of tractor and implement
4. A single unit of operation—the tractor and implements form but one unit
5. Operator sees all his work—"Foresight is better than hind sight"
6. Tractive power in front of the work with operator behind the work

with

Indispensable Results

- | | |
|--------------|----------------------------|
| <i>Means</i> | No duplication by horses |
| <i>Means</i> | A large saving in labor |
| <i>Means</i> | Great ease of operation |
| <i>Means</i> | Can back and turn short |
| <i>Means</i> | Better and faster work |
| <i>Means</i> | Power like horses are used |

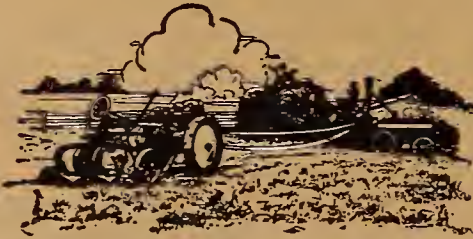
UTILITY IS NOT SACRIFICED FOR PRICE



The Moline Universal Tractor places the power of nine big horses where the horses stood—is driven just like horses are driven, from the seat of the implement, and hitched up to the implements just like horses are hitched.

The Power of a Correct Principle

The principle of doing all field operations with one man sitting where he can watch his work is correct, or farming has always been done backward, and the operator would always have ridden or led his horses instead of driving them.



NOTE—If desired you can use the "drag behind" or horse drawn implements you now have with the Moline Universal the same as with other types of tractors

See your Moline Dealer or write our nearest branch for full information.

Moline Plow Company, Moline, Illinois

Branches at:

Atlanta	Oklahoma City	Baltimore	Spokane	Denver	Minneapolis	Des Moines	Columbus, Ohio
New Orleans	St. Louis	Los Angeles	Portland	Kansas City	Minot, N. D.	Bloomington, Ill.	Jackson, Mich.
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ORNAMENTAL FENCE

8 Cents per Foot and up. Costs less than wood. 40 designs. All steel. For Lawns, Churches and Cemeteries. Write for free Catalog and Special Prices. Kokomo Fence Machine Co. 427 North St., Kokomo, Ind.

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Write for our Free Catalog! Shows you how you can save money by buying direct from the largest Berry Box and Basket Factory in the Country. New Albany Box & Basket Co., Box 110, New Albany, Ind.

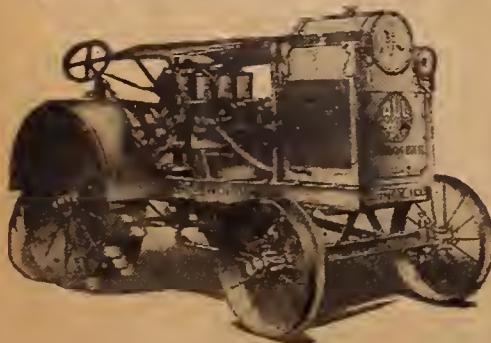
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20 1 CENTS A ROD and up for a 26 inch Hog Fence; 20¢ a rod and up for 47 inch. WE PAY THE FREIGHT. Low prices Barbed Wire. Factory to User Direct. Sold on 30 days' FREE TRIAL. Write for free catalog now. INTERLOCKING FENCE CO. Box 121 MORTON, ILLS.

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Six years of satisfactory service for thousands of others will insure for you a profitable investment in the ALLWORK. Write us now for our free catalog and interesting suggestions to tractor users.

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Dehorn 'em!

Better market prices and better results when dehorned.

LEAVITT DEHORNER

makes a quick, sure job of it—powerful enough to make the toughest horn an easy clip. "V" blades cut from all sides at once, leaving clean, quick-healing edges—crushing impossible. 70,000 in use in all parts of the world. Fully guaranteed. See your hardware man. Circular free. LEAVITT MFG. CO., Manufacturers 353 Griggs St., Urbana, Ill.



Timely Hints That Might Help You

By John Roberts

WELL, I made my monthly visit around the Department of Agricultural offices here at Washington the other day to see what I could find to interest you, and I dug up a good laugh in a county agent's letter. I have traveled with a number of them in several States, and I remember very distinctly how tired I got following them for a brief twelve hours or so. Therefore I could appreciate this report which came in to the Department the other day from one of them: "Burnt up ninety gallons of gasoline, five quarts of oil, had six punctures and one blowout. Trailer broke away, and upset load; pig fell out of the car, and was caught with difficulty. Afterward jumped from sty, and was run over by an auto. Buried three pigs with all the profits, and lost \$23 besides. Tore best trousers getting over pasture fence; broke watch crystal in loading corn planter. But outside of a few minor troubles had a very satisfactory month's work."

We farmers have been accused of being poor business men. I don't find that view among the farm management men of the Department of Agriculture, nor do I believe it myself.

It is true that many farmers are careless about account-keeping, but they cannot afford to take that chance for long now-days. They would have to go out of business. Farming in 1920, especially, will require attention as never before to stop the leaks and cut the cost of production.

The way to do this is to keep books. The time to begin is now, this month. It doesn't matter so much what system you use. It needn't be elaborate or double-entry bookkeeping. That isn't the cure-all of farm management by any means. It won't turn a poor farm into a good one, a poor farmer into a rich one, or losses into profits.

The simplest system, accurately kept and intelligently utilized, is likely to be the most useful. And usefulness is the test of value in farm account-keeping.

Perhaps the best system for the beginner is the plain diary. The daily page then can include not only the cash record, but also the daily happenings on the farm—when animals are bred, men hired or discharged, accidents, frosts, plantings, harvests, and so on. Information wanted at the end of the year or at any time during the year can be compiled in a few hours from a well-kept diary.

The use of a diary for farm accounts is fully described and illustrated in Farmers' Bulletin 782. In writing for it ask also for "Farmers' Bulletin 511, Farm Bookkeeping," and "Farmers' Bulletin 572, A System of Farm Accounting." These discuss the keeping and use of cost records—a second step for the beginner.

The Corn-Borer Menace

Considering the seriousness of the cotton-boll weevil, the Hessian fly, and other insects, blights, and scales which wreak havoc every year in our crops, the announcement by the Department that the worst pest of all has been introduced into the United States is anything but encouraging. But that is the admission of the Department with regard to the European corn-borer, which has gained a footing in Massachusetts and is spreading westward. The future of America's greatest crop—corn—is seriously threatened, and so far as I am able to learn the federal entomologists are not at all confident that this pest can be controlled and confined to the present infested area of 320 square miles near Boston. The fact that this pest, in France and Hungary, sometimes destroys one fourth to one half of such crops as corn, millet, hops, and hemp seems to justify the alarm over its introduction in this country, and accounts for the unusual activity of federal and state forces in combating it. The Department has a considerable force of specialists assigned to this pest, and rigid quarantines, both by the State and the Federal Government, have been placed. Imprisonment for five years and a fine of \$5,000 are the penalties provided by law for the intentional transportation of this pest.

The danger of outbreaks in other parts of the country makes it highly desirable that farmers everywhere become familiar with the corn borer, so that its presence can be reported promptly if discovered. The Department has just issued "Farmers' Bulletin 1046, The European Corn Borer," for that purpose. It describes the pest so

you can identify it, and tells of control methods that may be effective. Get a copy of this bulletin at once, and inform yourself about this insect. Federal, state, and local authorities in Massachusetts carried on thorough clean-up campaigns in infested territory last fall, but it was not regarded as likely that complete eradication could be accomplished. Unfortunately, the corn borer has no important natural enemies. Besides corn it is a serious pest of celery, Swiss chard, beans, beets, spinach, oats, potatoes, tomatoes, turnips, dahlias, crysanthemums, gladiolus, geraniums, timothy, and certain weeds and grasses. There are two generations each year, so that multiplication and spread are rapid.

New Light on Animal Diseases

I summarize here a few important facts the Department is prepared to announce as the result of progress on experiments in the control of animal diseases. You can obtain more information about the nature of these diseases by asking the Department for publications describing them:

Tuberculosis among brood sows does not seem to be a menace to their progeny if other exposure to infection is eliminated.

Feces of tuberculous cattle have been found to be the most dangerous tuberculous material to which hogs are exposed under natural conditions.

It now appears that the disease known as thumps in young pigs may be the result, in some cases at least, of intestinal worms which in the larval stage migrate to the lungs, causing pneumonia. Some very thorough work leads to the conclusion, and research is now being directed to prevent infection of suckling pigs with this parasite.

The disease causing the birth of immature and hairless pigs seems to be the most prevalent in the Far West. Its investigation is being continued.

It appears from experiments with hog-cholera virus, and the ways in which cholera spreads, that pigeons and similar birds are unlikely to transmit hog cholera.

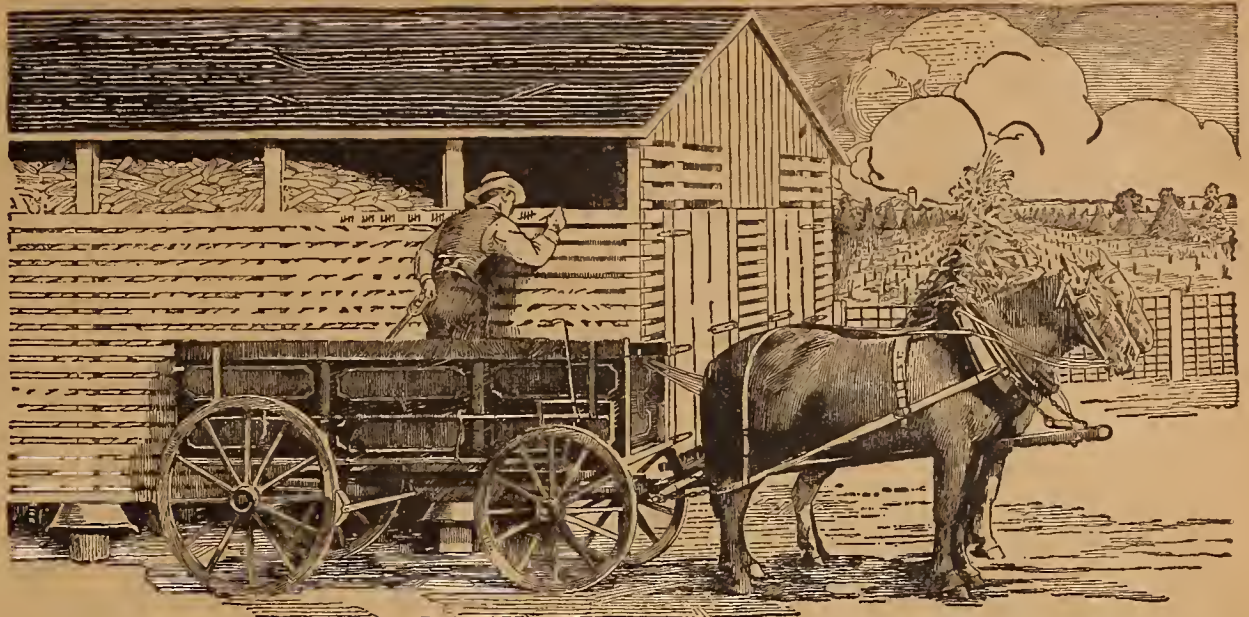
A Crate for Traveling Piggy

You might think anybody could build a hog crate. But there are crates and crates. One kind cramps the animal, gouges him with carelessly turned nails, forces him to throw in reverse and back out instead of making a grand, dignified emergence through the front door at destination—and you mustn't offend a pure-bred's dignity in that manner nowadays—or it crumples up on the station platform, allowing the porker to go about town, with the station master in his wake. The other kind is described in a little illustrated circular the Department is sending to inquirers. It tells how to build a crate to fit the hog and stay with him to the journey's end. It doesn't have unclinch nails and other high spots to "treat him rough." And with the slats nailed on the outside instead of the inside—the ordinary way—several inches more of space for the hog is gained with the same amount of lumber.

Because crates are used extensively in transporting breeding hogs, and in sending show animals to fairs, the Department sees in the 52,000 requests that have already come for this circular an index to the improvement in the hog industry. Many of the inquirers were pig-club members, with a deep respect for the traveling rights of their prize winners. The circular will be sent free on application to the Department.

Father Helps the Kids

Here's an item, boys and girls, you can mark and hand to Father in case he is a bit reluctant to turn over a few head of stock or a little land for your club work. Down in White County, Tennessee, there is a daddy of six who manages to find a place for any kind of club work they want to take up. And they are all busy members of clubs. One girl has a flock of chickens in one barn, and the second has a flock in another. The third has the use of the poultry house and yard. A fourth girl raises geese. The two older boys each have their sheep and hogs. The children don't forget Dad's favors. They give him a per cent of their profits in return for the feed and housing he furnishes. They keep accurate records of their club work, and all six are good boosters. By the way, boys and girls, why don't you get into business for yourselves this year and make a little money? Go talk it over with the county agent or the home demonstration agent.



It's the extra loads that pay the profit

WATCH the man in your neighborhood who makes the most money from his corn crop. He knows how to get big yields. Every year he puts a few *extra* loads into his corn crib and those *extra* loads pay his profit.

You must have a fertile soil to get big yields. There must be ammonia to give the young plants a quick start. There must be phosphoric acid to grow strong roots in the Spring and to make hard ripe corn in the Fall. There must be potash to make sturdy stalks and to fill the ears.

Fertilizer supplies quick-acting plantfood. When there is no manure, extremely profitable yields of corn can be grown with fertilizer alone.

When manure is short, spread it thinly and use fertilizer to make up the shortage. When there is a good supply of manure, use fertilizer to furnish the phosphoric acid that manure lacks, and which is needed for well filled grain and early maturity.

"High Analysis" Fertilizer for Corn

One of These Will Fit the Conditions on Your Farm
The figures represent percentages of ammonia, available phosphoric acid and potash, in the order given:

For sandy and loamy soils, and all worn soils, especially where the manure is short—

2-10-6 or 2-10-4 or 2-12-2

For use on clay loams or other soils which contain plenty of potash —

2-12-0

For use where the soil has plenty of available ammonia; where plenty of manure is used; where legumes are plowed under —

0-10-8 or 0-12-4 — 0-12-2 or 0-16-0

Our Automatic Formula Finder will help you select the right fertilizer to use on your other crops. Be sure to send for one.

We can help you solve this problem of profitable corn growing. Send for our booklet, "More Plantfood for More Corn". Also ask for our Automatic Formula Finder. It will help you select the kind of fertilizer needed for all your other crops.

SOIL IMPROVEMENT COMMITTEE

of the National Fertilizer Association

CHICAGO

1759 Lumber Exchange Building

BALTIMORE

1059 Stock Exchange Building



—replaces
the horse

IT plows, harrows, seeds, cultivates, mows hay, mows lawns, hauls loads; does any farm or garden work ordinarily done by one horse or by hand—does it faster, better and cheaper. Solves labor problems. The original one-horse tractor, tested and proven on thousands of farms. Also does 4 h. p. gas engine belt work and moves from one job to another under its own power—useful the year around. Write for interesting free booklet.

BEEMAN TRACTOR CO.
340 Sixth Avenue South
Minneapolis,
Minn.



Low steel wheels, wide tires, make loading and handling easier. We furnish Steel Wheels to fit any axle, to carry any load. Plain or grooved tire. Catalogue sent free.

EMPIRE MFG. CO., Box 368, Quincy, Ill.



Catch Fish, Eels, Mink, Muskrats and other fur-bearing animals in large numbers, with the New, Folding, Galvanized Steel Wire Trap. It catches them like a fly-trap catches flies. Made in all sizes. Write for descriptive price list, and free booklet on best bait known for attracting all kinds of fish. **J. F. Gregory, Dept. 243, Lebanon, Mo.**

Turn stump land into Money

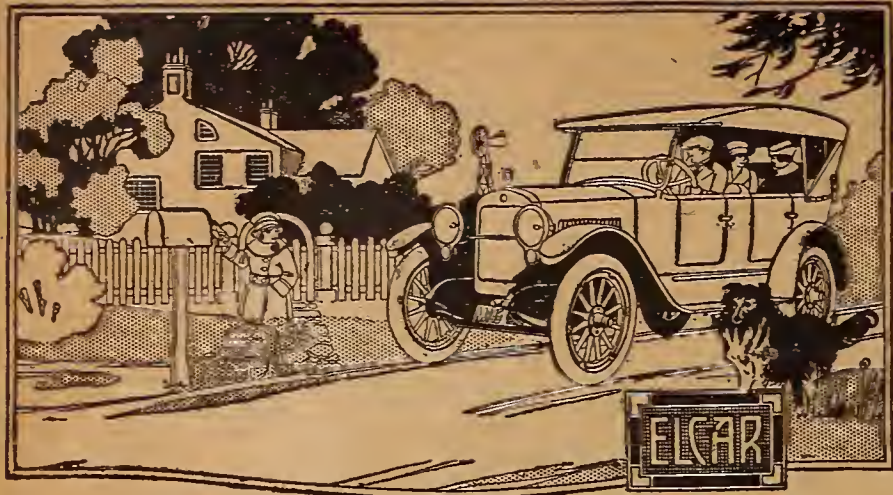
Increase your acreage and thereby increase your income. Clear your stump land cheaply. No expense for teams or powder. One man with a



can outpull 16 horses. Works by leverage—same principle as a jack. 100 lbs. pull on the lever gives a 48-ton pull on the stump. Made of the finest steel—guaranteed against breakage. Endorsed by U. S. Government experts.

Write today for special offer and free booklet on Land Clearing

Works equally well on hillsides and marshes where horses cannot operate
The Fitzpatrick Products Corp.
Box 28, 99 John St., New York
Box 28, 182 Fifth St., San Francisco, Cal.



The beautiful, practical ELCAR has no rival at the price

FOR size, beauty, comfort, power and sturdy endurance the ELCAR easily leads in the medium priced field.

It is the product of forty-seven years of fine vehicle building—twelve years of fine automobile building.

The ELCAR appeals to those who have intimate knowledge of automobile construction; who know on what riding comfort, perfect performance and economical upkeep depends.

It is built for those who want a car that embodies beauty and distinction of design with abundance of power and so mechanically perfect as to give years of exacting service, and it is built for those who wisely desire to obtain all these advantages without wasteful cost.

A Glimpse At The Quality

Four-cylinder models have the powerful long-stroke ELCAR-Lycoming motor, developing 37½ horsepower. Six-cylinder models have the remarkable new 7-R Red Seal Continental motor developing 55 horsepower. Fours and sixes are identical aside from power plant, 116-inch wheelbase, Delco starting, lighting and ignition. Willard Batteries. Latest Stromberg vertical carburetors. Borg and Beck Clutch. New Type floating Salisbury pressed steel rear axle. Spiral bevel driving gears. Timken and Hyatt bearings. Muncie transmission, tubular propeller shaft, two universals. Wonderfully easy-riding, semi-elliptic springs. Beautiful, roomy bodies. Truly luxurious upholstery. 33x4 tires, non-skid rear. Duplex lamps. Walnut instrument board. Equipment complete even to Boyce Moto-Meter on radiator.

Eight Models—Four and Six-Cylinder

Five Passenger Touring Car	Three Passenger Coupe
Four-Cylinder \$1395.00	Four-Cylinder \$1995.00
Six-Cylinder \$1595.00	Six-Cylinder \$2195.00
Four Passenger Sportster	Five Passenger Sedan
Four-Cylinder \$1395.00	Four-Cylinder \$2095.00
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All Prices F. O. B. Elkhart, Indiana

Write for Special Catalog E
and name of nearest dealer.

ELKHART CARRIAGE & MOTOR CAR CO.
Elkhart, Indiana

Cupid Astride a Mule

[CONTINUED FROM PAGE 24]

bear up a tree. Why don't you shoot?" Davy hesitated.

"Shoot!"

The boy looked into the fire.

"Susan," he faltered, "she an' Sam Long was keepin' company. I never see anybody tone down like Susan—stopped flirtin' an' all. She an' Sam Long 'was goin' to marry—everything was all right till you come."

Girard rose.

"Is that true, Davy?"

"The God Almighty's truth! She told me so herself!"

Girard was silent for several minutes.

"I see," he said at last, and ran his hand through his hair. "I see."

Next day Girard did not come to the store, nor next. At the end of the third day Susan cornered Davy. There was a frown on her face and her eyes snapped.

"Did you go over to the lodge the other night?" she demanded.

Davy nodded.

"What did you tell that man?"

"A lot of things. Me an' him had a long talk."

"What did you tell him about me?"

"Told him you an' Sam Long was goin' to marry—that's what I told him. He's the fust person I've told, too."

Her eyes shot fire.

"I've got a great mind," she cried, "to take a barrel stave to you, you impudent brat!"

Davy's under jaw shot out. He drew up taut as a fiddle bow. In his gray eyes came the gleam that boys at school had learned to fear.

"No, you won't."

"Why, I'd like to know. Why?"

"'Cause I wouldn't take no lickin' off'n you, Susan Gant! You ain't no school teacher!"

"Then get out of here. You're fired—understand, fired!"

"I don't want the old job!" was Davy's parting shot.

His anger lasted halfway home. Then it left him sober all at once. His wages had been going to Uncle Ben. What would Uncle Ben say?

Uncle Ben came out of the house to meet him. Davy hung his head with the humility of the unemployed.

"Home early," said Uncle Ben. "What's the matter?"

"Warn't nothin' to do at the sto'," Davy evaded.

"Well, you ain't a-goin' to work at the sto' no mo'."

The boy glanced up fearfully. Uncle Ben must have heard!

Uncle Ben scratched his chin.

"That man Girard was over just now," he announced. "Fine man, Girard. He wants you. I told him you could give up your job an' stay with him while he's here. You can git yo' things together an' go on over." The worthy foster parent neglected to mention the fifty cents a day Girard had offered for Davy's services. He looked down sternly at his charge. "Don't learn no meanness," he warned, "an', for God A'mighty's sake, don't git stuck up!"

And so Davy went, bag and baggage. For the first three days Girard pecked away, day and night, at his typewriter. Then on the morning of the fourth he sent Davy to the post office with a bulky manuscript. When the boy returned, Girard was in hunting coat and leggings, and Jess, the pointer, was running round and round the lodge, barking and leaping into the air.

FOLLOWED the two happiest weeks of Davy's life—weeks in which the two of them hunted all day, while at night, before roaring fires, Girard told him about strange places and of things he never had heard. Then came a change. Girard went to the nearest city, to see a doctor he said, and returned silent and grim. For, though he didn't tell the boy about it, he had heard in the city something that aroused a terrible suspicion in his mind. The doctor had made a thorough examination.

"What did your physician in New York tell you was the matter with you?" he asked when it was over.

"He said it looked like T. B."

"Well, he probably gave you good advice so far as taking a rest was concerned. But, Mr. Girard, when it comes to your having

T. B., or any symptoms of it—well, I'll say your physician is something of an alarmist!"

And that was what made Girard come back, his mind in a turmoil. True, Fleming had not committed himself. He had only said it looked like T. B. It was a matter of opinion, perhaps, as to the way his condition appeared to different physicians. But Girard, remembering that day in Fleming's office, could not throw it off—Fleming had wanted him to get out of New York!

The more he thought about it the more restless he became—the more alarmed for Agnes. Leaving out the question of his feeling for her, he, like any decent man, hated to think of her marrying one about whom he could even have such a suspicion.

"If I didn't know him!" he said to himself. "But I do!"

And so it happened one day at the midday meal Davy's heart sank into his shoes.

"I've decided to leave to-morrow," said Girard. "I must get back in harness, Davy. I'm all right now."

So plainly was distress written on the boy's face, that Girard smiled cheerfully.

"We'll have a holiday to-morrow all day," he said. "I'll pack this after-

noon. We'll take a lunch and go to the river fishing. You can take me to the nine-o'clock train to-morrow night."

Gloomily Davy sat on the cot while Girard packed. Some dark days the boy had known—when his father died, when his sister went to distant relatives to live, when his hound gave up the ghost. This was the darkest of them all.

From the tray of the trunk Girard took a picture and handed it to him.

"I know she would want you to have it, Davy," he said.

The boy looked at the picture of Agnes, who smiled at him as if in mockery. The lump rose in his throat. He came out and walked round the lodge.

THAT night he went to the store to ask for the last time after Mr. Girard's mail. Mr. Gant, Susan's father, up from his winter attack of rheumatism, was in the store, and Sam Long. Susan had gone to Camden for a day's shopping, Mr. Gant explained. She would come back with the mail. Disconsolately Davy waited.

When Susan came in with her mail sack her face was flushed with excitement. Her hands trembled as she arranged the mail. She glanced at Sam Long nervously. She had found her master, had Susan. In her heart she gloried in the fact.

She handed out the mail to those who had called for it, and one by one they left the store.

"Nothing for that great writer," she announced to Davy. "Come here, Sam—I've got some news!"

Everyone had left the store but the three. Susan sat on the counter and swung her feet against the sides.

"Remember that girl that got lost?" she asked Davy. "Your great friend, Bud? I saw her to-day in Camden!"

Davy gasped.

"Miss Agnes!"

"The same. Met her on the street. Oh, she was carrying her head high, she was! When I got through with her she was as meek as a lamb, in spite of her uppity ways. I floored her, I did!" She was looking at Davy, not at her man.

"I put her wise to that man over there—I put her wise to that Mr. Girard!"

"Susan," broke in Sam sternly, "I never saw a finer young woman than Miss Agnes!"

"Oh, yes—fine feathers make fine birds, Sam. I plucked some of her feathers! She wasn't quite so gaudy when she went back to that swell hotel. Cheer up, Sam—it's my last fling at meanness! I had to get it out of my system. No more for me." She jumped down from the counter and came close to him. "I couldn't help it," she pleaded, "really I couldn't! It's all over now, and whenever you want me, Sam Long, just crook your finger!"

Davy came out of the store dazed. Agnes was within twenty miles, and Girard was going away next day. Things were out of joint.

[CONTINUED ON PAGE 44]

25 Cords a Day

Easily Sawed By One Man.

Easy to move from cut to cut. Make big profits cutting wood. Cheap and easy to operate.

OTTAWA LOG SAW

Does 10 men's work at one-tenth the cost. Makes work easy. Engines can also be used for running pumps and other machinery. Saw blade easily removed. Write for our low price.

Cash or Easy Payments.



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Mfg. Co.
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YOU KNOW IT PAYS

Cooked food makes your live stock produce better. Warm water for the cows means more milk. Hogs eat more when given warm food;

it digests easier, resulting in more rapid growth, larger frames covered with solid meat. If you expect eggs in winter, you must feed warm food.

Have ALL
the HOT
WATER
YOU WANT



IT PAYS BIG
Farmer's Favorite Feed Cooker and
Agricultural Boiler

For butchers, sugarmakers, poultrymen, stockmen, dairymen and fruit growers. Portable, use indoors or out, as boiler or stove. Burns chunks, long sticks, cobs—anything. Guaranteed.

Write for Folder and Prices.

Lewis Manufacturing Co., Dept. 200, Cortland, N. Y.

The Hip of the Gobbler, Where Marabou Feathers Come From

By Elizabeth Sears



WELL may the turkey strut proudly and pose as a national bird. For he has the makings of more industries in him than any other bird, perhaps, as he furnishes not only the foundation for the big dinners with which we celebrate our holidays, but the beautiful feathers with which women love to decorate themselves—not to speak of the contribu-

tion to the fishermen in the way of fishing tackle. And he is still strong on the old-time turkey fans made of wing feathers, that are so handy in the kitchen.

Milady wears turkey feathers in more than one way that she may not suspect. She has unwittingly worn them as marabou ever since some enterprising feather dealer discovered that the turkey marabou was far better than those taken from the none too plentiful adjutant bird.

It happened four or five years ago, when a poultry dealer in the West wondered what he could do with the turkey feathers in his picking-room. He had just paid a high price for a marabou set for his oldest daughter, and he chanced to notice that the fluffy little bunch of feathers that grew just under the wing of the turkey—on its hip, so to speak—were exactly like the marabou feathers. He realized that such feathers would not be salable unless they were plucked alive. So he began to buy his turkeys "on the hoof." He plucked them dry, and sold the cheaper grades of the feathers to feather houses, where they were sorted out and the better grades resold to the trimming houses to be used on hats.

The marabou was a different affair, and the dealer wished to guard his secret. He had them removed carefully by chosen workers. The bunch is taken from the hip, just under the wing, and there is but a tiny group of the delicate, airy feathers on each bird—hardly an ounce. But there are plenty of turkeys in the West, and marabou sometimes brings \$16 a pound.

The commercial name for these feathers is "downs." They are sorted and selected with great care, together with several other valuable rows of feathers found along the hips of the turkey, and which were formerly thrown into the junk pile. The "skirts," or long row of short feathers, are valuable, and so are the long tail quills, both of which are used not only as ornament but also in the finishing of feather dusters.

Then comes a row of what is termed "roughs," or downy feathers a bit coarser than the marabou, and hidden deep beneath there is the prized bunch of downs that have almost put the adjutant bird out of commission.

In fact half the expensive pompons worn by complacent women on their new

spring and fall hats are made of turkey feathers, carefully sorted, sewed, and dyed. Some of the expensive breasts that are durable, and may be cleaned and worn for years, being sewed and not glued, are made of choice assorted turkey feathers. And some of the wing feathers are even used for imitation paradise feathers.

A simple little spray of the real thing—just one—will cost from a dollar up to what the dealer thinks he can charge. As it takes at least twenty-five of these small sprays to make any kind of showing as trimming for a hat, you can imagine what the entire bird would cost. But a clever feather man devised a way to singe the fiber from a turkey feather and to curve it artistically when the fiber is removed, leaving only the skeleton feather. He dyed it and then bleached it yellow, and made an imitation head of brown velvet for the head and throat and put it on the market as a very passable imitation of a bird of paradise feather.

Once they discovered the possibilities of friend gobbler, they found that they could make very handsome trimmings of the hackle feathers, as well as fishing tackle, and the feather dealers, who will buy only in large lots, began to attend the turkey drives.

The feather trade is brisk in the fall, when big drives of 2,000 turkeys are brought in. The driving of these immense flocks to the market is a story in itself. Feathers from such a flock will be worth waiting for, and the feather men gather in the towns that expect a turkey drive. Bidding and buying are brisk for a time, and the feathers that were once wet picked, and considered almost a total loss, are now sorted with much care and sold to the highest bidder.

The marabou feathers, being the most expensive of all the gifts of the turkey, are handled and bid for separately. The white ones are more sought after than the tinted ones, for they are snowy-white and will wash like cotton.

So, the next time you see an expensive set of marabou, you can take pride in the thought that it is an American production, and that it probably came from a flock of white turkeys in Lafayette County, Missouri, which markets a great many turkeys every fall.



Socks and Stockings to be glad about

WHEN you wear Durable-DURHAM Hosiery—your feet are joyful
—your pocketbook is glad
—Mother is happy because there is so much less darning.

Every pair wears longer because made stronger at points of hardest wear.

Socks and stockings for city people—for country people—for women, children and men—for dress, for work, for play. Durable-DURHAM is the hosiery of the American family.

Ask your dealer for Durable-DURHAM. Ask to see the Lady Ware and the new Lady Durham style for women, the Cavalier for men and the new fine Polly Prim for children.

Look for the Durable-DURHAM trade mark ticket on every pair.



LADY WARE
A very fine mercerized stocking, fashioned with seam back. Black, white, gray, Cardovan.

Money-Saving Hints From My Card Index

By Mrs. A. J. Cavanaugh of Kansas

AS OUR family is a small one, I have always tried to do my own household work, with the exception, of course, of harvest time and the canning season. And during our four years of farm life I have experimented quite a bit, and have discovered many small ways of easing labor, saving time, and dispensing with trouble. Each little item in itself is not such a great help, but taking them all they amount to a great deal. And for fear I may forget, when once I have proved a little "helper," I type same on a card, index, and place in a cabinet, ready at any time.

I have not space to give nearly all of these items, but here are a few:

As all housewives know, when breaking eggs pieces of the shell often get into the bowl, and it is difficult to remove them. By just touching the pieces with the half eggshell I find that they cling to it and are easily taken out.

I always place a small piece of char-

coal in the kettle when cooking turnips, cabbage, onions, or other vegetables of disagreeable odors. By doing this the vegetable is not injured in the least, and the odor is entirely removed. Try it and see.

All housewives know how hard it is to blue the clothes when using hard water, without the bluing streaking them. I found that a cupful of sweet milk added to the tub of bluing water would always do away with the trouble. Skim milk is all right, if not "blinky."

When I want to boil anything quickly, like cider for apple butter, or sugar water in sugar-making time, I just place a stick across the top of the vessel in the center, and it simply can't boil over.

I always save rolled oats or other break-fast-food containers. When opening I cut smoothly around three sides of end. When empty they are fine for packing away the summer's dried fruit and vegetables, also for holding farm and garden seeds.

**DURABLE
DURHAM HOSIERY**
Made strongest where the wear is hardest



Buy Them With Your Egg and Chicken Money!

Set aside your egg and chicken money—and, almost before you realize it, you will have enough to buy an equipment of beautiful "Wear-Ever" aluminum cooking utensils.

Bright, light, silver-like "Wear-Ever" utensils will make you as proud of your kitchen as you are of the other rooms in your home.



cost slightly more than ordinary utensils because they are worth more. It pays to buy "Wear-Ever" just as it pays to buy good farming implements.

"Wear-Ever" utensils are made in one piece from hard, thick sheet aluminum without joints or seams. Cannot crack, flake or peel—are pure and safe.

Replace utensils that wear out with utensils that "Wear-Ever"

Look for the "Wear-Ever" trade mark on the bottom of each utensil

The Aluminum Cooking Utensil Co. New Kensington, Pa.
In Canada, "Wear-Ever" utensils are made by Northern Aluminium Co., Limited, Toronto, Ont.

DEAF PERSONS!

Should Investigate the OTOPHONE

a small, compact instrument held against the ear, not inserted. No batteries. Natural voice tones. No buzzing. Send for illustrated booklet giving particulars of

Free Trial Offer

E. B. MEYROWITZ, Inc.
520 S. FIFTH AVENUE, NEW YORK
In Business Over 40 Years



Dye Old, Faded Dress Material

"Diamond Dyes" Make Shabby Apparel Stylish and New—So Easy Too

Don't worry about perfect results. Use "Diamond Dyes," guaranteed to give a new, rich, fadeless color to any fabric, whether wool, silk, linen, cotton or mixed goods,—dresses, blouses, stockings, skirts, children's coats, draperies,—everything!

A Direction Book is in package. To match any material, have dealer show you "Diamond Dye" Color Card. Wells and Richardson Co., Burlington, Vt.

\$3.95 THE BEST SHOE VALUE



REDUCE SHOE EXPENSE ONE HALF

BUY DIRECT FROM FACTORY

In the face of increased costs, I have reduced my prices to pre-war level by increasing my production, low manufacturing cost and making my factory the largest in America, selling exclusively direct to the wearer.

Send only coupon—NO MONEY, and you get the ONLY SHOES with uppers of soft full grain leather, leather insoles and extra heavy leather outer soles. Pay when they come, keep them only if satisfactory in every way; otherwise return them at our expense.

ONLY SHOE CO., 299 Broadway, N. Y. C.
Without obligation to me, send shoes Order No. 1075 on approval. Money back if I want it.

Name.....Size.....
Address.....



\$3.48 SEND NO MONEY

Biggest Value Ever Offered

Beautiful pants to your order, of fine quality striped worsteds, through and through weaves for dress or business, guaranteed to give you two solid years satisfying wear or MONEY BACK, tailored any style or size—No Extra Charges—parcel post or express prepaid. Biggest \$3.00 value ever offered or money back. Write for 60 cloth samples, Free Special THIRTY DAY TRIAL OFFER, one \$3.48 Pair to a customer.

Make Big MONEY a week sending orders for your relatives and friends. Your spare time will do. COMPLETE OUTFIT and simple directions in first mail—FREE.

Send us your name—TODAY. CHICAGO TAILORS ASSOCIATION 515 S. Franklin Street Dept. B-618 Chicago

Cupid Astride a Mule

[CONTINUED FROM PAGE 42]

He walked down the road and turned off toward the lodge. He carried a stick to keep off dogs.

"That Susan!" he muttered bitterly. "She's done busted up everything now!" He smote an unoffending tree viciously with his stick. "Dammit all!"

AGNES WARING had finished breakfast with her mother at their hotel in Camden. Two or three of her friends on the way out stopped at her table and invited her to join them at golf. But she pleaded a headache, and they went on.

"I think I'll take a little walk, Mother," she said as they rose from the table.

She went to her room and put on her hat. She must be alone to readjust herself, to gain poise after the shock of yesterday.

She did not know just why she had come to Camden. Certainly it was as good a place as another, and the winter in New York had been severe. A cricket tourney offered sufficient excuse. Her mother, who had noticed her abstraction and pale cheeks, had readily consented.

"Then I want to see what can be done about Davy Allen," Agnes had said, and her mother had agreed with her.

The story of Susan Gant the day before had been the greatest shock of her life. She had looked upon Philip Girard as all that was chivalrous and upright and generous. Even his leaving her without a word she had assigned, as she reflected upon it later, to some chauvinistic motive. And he had passed his time making love to Susan.

Toward Susan she felt no resentment. But that Girard—the thought was repellent, sickening.

But with the fascination of horror the thought had stayed with her, preyed on her, would not let her sleep, followed her into the bright spring sunlight of a new day. As she came down the steps of the hotel the bus drew up, the driver opened the door, and out stepped Frank Godfrey, whom she had not seen since that morning the autumn before when she left the hunt club.

And what should he do but start talking at once of Philip Girard. Did she know where he was? He hadn't heard a word from him—he didn't know where Girard had gone. Pity for a fine fellow like that to drop out!

"I hope it won't get him," he said.

"What?" asked Agnes, startled in spite of herself. "What do you mean?"

"Why, don't you know? Poor chap's got T. B."

"But he can't have!" she said growing excited. "Dr. Fleming told me himself that he was just run down!"

"Well, he may have told you that, but that's not what he told Girard. I saw Girard at the Penn Station the morning he took the train. Asked him where he was going. He said to the country somewhere, that Fleming had said he likely had T. B. Anyway you can ask Fleming him-

self. He came down on the train with me. He'll be out on the next bus."

Agnes turned away and walked slowly through the grove of lofty pines that the bland sunlight had turned into a glorious temple of the morning. She had reached the edge of them when she saw the hotel bus stop, and Fleming got out and hurry toward her. Her heart suddenly began to pound; she knew why he had made this trip down here; his pursuit had suddenly become repellent to her. He joined her, hand extended, smiling, affable, assured. He had never seen her so pretty, he said.

There was a bench near. "Let's sit down, Dr. Fleming," she said coldly.

When they were seated Fleming leaned toward her.

"Didn't you know I was coming?" he asked.

"I did not, Dr. Fleming."

His black eyes were on her face. "I can't be happy unless I am near you, Agnes."

The blood rushed to her cheeks; she moved away from him; but she met his ardent gaze squarely, as no woman can meet the gaze of a man she loves.

"Why, Agnes!" he pleaded flushing.

"Surely our relationship has been—er—rather close. Surely you know by this time that I love you."

She looked at him with widening, steady eyes, and with dawning comprehension. Suspicion, instinct, memories, together with what Godfrey had told her, were all culminating now in one conclusion. She felt a sudden repulsion at his nearness, and rose. Fleming rose with her.

"What's the matter?" he demanded.

She stood very slim and straight before him, her eyes unwavering, and frank with the terrible frankness of youth.

"Dr. Fleming, I want to ask you a question—did you tell Philip Girard last winter that he had tuberculosis?"

Fleming hesitated, frowning and pinching at his glasses.

"I may have intimated it."

"Did you believe he had it?"

Fleming's eyes flashed.

"Girard's been talking to you. Is he here?"

But Agnes did not answer the question. "Did you believe he had tuberculosis?" she repeated.

"I don't know what you are getting at," said Fleming. "It was, as well as I recall, one of those cases where I wasn't sure."

"Did you try to be sure? You are an expert diagnostician, Dr. Fleming. You once showed me your laboratory. Did you use the tests you explained to me, or did you just send him away?"

He looked at her suddenly from underneath his hat brim. It was something like a sneer.

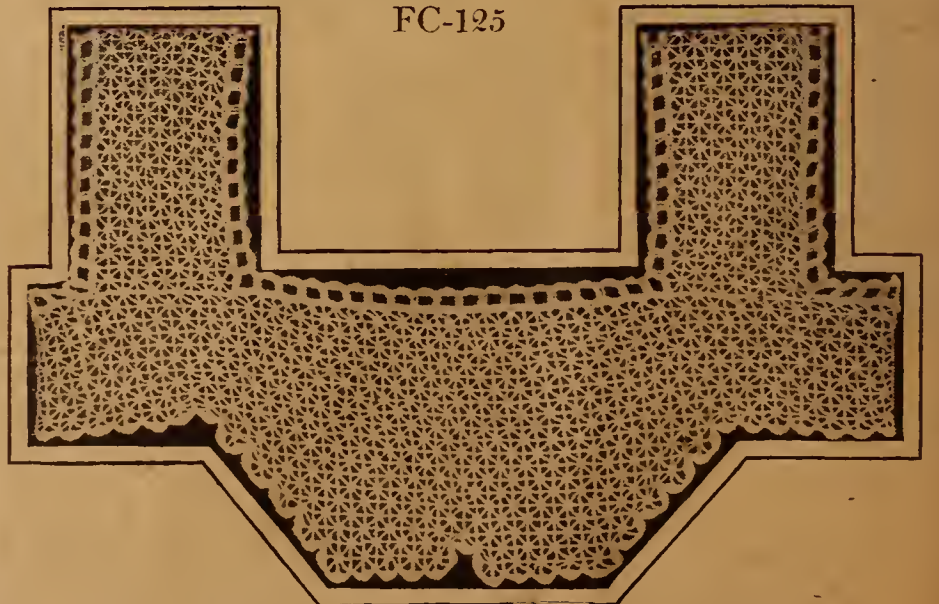
"Girard's been talking to you," he said.

"He's been telling you some sort of cock and bull story—"

"Oh—he has not!" she cried. "He does [CONTINUED ON PAGE 50]

Spider Web Yoke

FC-125



A DAINTY, cobwebby affair is this yoke, and one of its beauties is that it is easily made. For complete directions send four cents in stamps to the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio. Order No. FC-125.

A Pi-and-Pie Party That's Heaps of Fun

By Emily Rose Burt

THERE is a fascinating amount of fun to be had from a combination Pi-and-Pie Party. One was planned by the young folks' society of a small church along the following lines:

In the first place, the invitations were lettered on flaming yellow posters stuck up around the village. A black silhouette of a little boy consuming a huge wedge of pie flanked the words which were in the form of a newspaper paragraph thus:

A pi-and-pie party is to be held on Friday evening next in the ——— Parish House. Everybody interested in either variety is invited to come. The costume de luxe will be newspapers worn as best befits each individual.

There was plenty of fun on the appointed evening in seeing the ways in which newspapers had been adapted to this new use. They were tied and pinned over the ordinary garb, and in some cases were sewed on. Several lads wore cocked hats of newspapers, many ladies wore prim, folded fichus.

The first amusement was a stunt to

up accounts. Any number of clever ways to act the following will occur to you:

The World.
The Sun.
The Star.
The Times.

The Telegraph.
The Press.
The Journal.
The Post.

The Observer.

The next amusement was a pie contest of a different sort from the first one of the evening. A plate full of generous wedges of pumpkin pie was brought in, and contestants were called for to tackle the pie-eating.

At a given signal all the contestants bit into their segments of pie, and the first one through in a given time was awarded a prize. Another award was offered to the person who had achieved the cleanest face in the process.

A jolly plan to follow is to appoint a number of editors from the throng—say a sporting editor, society editor, woman's page editor, news editor, etc. Each editor then chooses a staff, and leads in a general entertainment stunt.



All "set" for the biting signal

break the ice, which hardly needed any more breaking in this case. Slips of paper were passed in a basket from which each person selected one. It was announced that this was really a collection of pi, and must be straightened out.

Upon looking at their respective slips the players found that there was a letter of the alphabet on each one. In their normal order these letters would spell a sentence. A good one to choose would be a well-known proverb, such as, "A stitch in time saves nine," or "A rolling stone gathers no moss."

If there are enough people, two proverbs or more can be spelled in this way, the letters in each being distinguished by different colors—blue, pink, or green.

Another amusing occupation is to pass out numbered names of newspapers to be acted, charade-fashion, in groups for the rest to guess. All persons drawing slips numbered 1, for instance, upon comparing may find that their newspaper is The Morning Herald, or The Evening Recorder. A suggested way of acting the former is to get all the group to crow like a cock. To illustrate The Evening Recorder all may pretend to be writing up diaries or casting

The sporting editor puts through events of various sorts, such possibly as a saw-horse race, a pirate race, a high-brow race, a standing low jump, etc.

The society editor whispers a bit of scandal to her neighbor, who repeats it in turn to the next person, and so on until it has gone completely around the circle. The last person to whom it is whispered tells what she thinks was told to her, and compares it with the original statement, to the amusement of all.

A cartoonist contest may be introduced, and a subject given out for illustration. Possibly one person in the group may be able to draw most of them, and the others may cudgel their brains for clever ideas. A blackboard makes this especially jolly entertainment.

Of course, the refreshments of such a social as this must be partly pie, so little lemon pies baked in crinkled patty-pans and topped with meringue were served with hot coffee.

EDITOR'S NOTE: Descriptions of the stunts for the "Sporting Section" will be sent on receipt of a stamped self-addressed envelope. Address Entertainment Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

The Way We Manage Our Children's Spending Money

JOHN and Mary were ten and twelve respectively when I married their father, and I doubt if there were to be found anywhere two children with so little sense of responsibility. Their own mother died when they were babies; their kind and faithful nurse was quite incompetent to teach or train them; and their father admitted that he was unequal to the problem. Sometimes I think that was why he married me.

They were healthy, handsome, clever youngsters, and as good as gold. But they had the faults that come from lack of training, and among these a prodigal

extravagance that was already a source of real embarrassment to their father. He did not like to talk about money, and always gave them what they asked for. He even allowed them to charge what they wanted at the stores.

I began by talking over with them the family finances. They were impressed and sympathetic. I showed them what amount had been set aside to be devoted to each of them; what could be spent for their clothing, school books, health conservation, church and Sunday-school dues, amusements, and vacation trips, pocket money, incidentals [CONTINUED ON PAGE 49]

PHILIPSBORN'S 30th Anniversary Spring Style Book FREE!



Tam
3AX
11100
\$2.68

To celebrate our 30th Anniversary and completion of New Million Dollar Philipsborn Building—the most modern Mail Order Plant in America—we offer a vast assortment of newest styles—at wonderful bargain prices! Send postal for richly illustrated 264-page Anniversary Style Book—all styles approved by IRENE CASTLE—herself.

Tricolette \$7.98
Suit Dress Pre-paid

The Craze for Spring 1920

8A4124X—This new model suit dress is a complete outfit either for indoor or outdoor wear. Serves the four-fold purpose of dress, suit, sweater or skirt.

Made of mercerized tricolette, a knit fabric of rich lustrous sheen. Skirt is popular straight line model, two sport pockets. Coats straight of line with the favored Tuxedo collar. All-around belt. Worth \$15.00—you'll say so or we want you to return it.

Colors: Turquoise blue, coral, rose or rich shade of purple.

Sizes: All ladies' and misses' sizes up to 42 bust. Prepaid \$7.98.

New Paris Model Hat 3AX-11100. Newest creation in silk ribbon Tam \$2.68

with ribbon tassel. Colors—Rose, Copenhagen Blue or Gold. Special price, prepaid.

Sample Anniversary Bargains

Silk Dresses \$7.98 up Cloth Skirts \$2.48 up

Wash Dresses 1.98 up Wash Skirts 98c up

Waists 98c up Millinery 79c up

Suits \$12.98 up Shoes 98c up

Satisfaction or Money Back

PHILIPSBORN'S

DEPT. 154

CHICAGO, ILL.

Send
Postal
Today

Suit
Dress
8A
4124X
\$7.98

We
Prepay
All
Charges



Better Babies

I SHOULD like to tell you a little of how much I appreciate your letters. When my baby was born I knew absolutely nothing about babies and their care. Of course, most young mothers are more or less inexperienced, but my case was exceptional. I had never held a baby in my arms until I held my own.

We had no relatives or friends who had had babies for a good many years, so my baby was really a problem. When he cried I was completely at sea to know what to do. Like all young mothers, I received much conflicting advice from well-meaning people, and a little sound advice from my doctor and the nurses at the hospital, with the result that at the end of the first month I was in a sad state of confusion, and baby was indisputably the boss of the household.

Then came the first letter—and, oh, what a help it was! I read it many times that second month, and, needless to say, my baby no longer had things absolutely his own way. Since then every letter has solved some problem.

My baby's habits are as regular as any adult's. Since he was three months old he has gone to bed at 6:30 P. M. and slept until 6 A. M., being awakened for his 10 o'clock nursing. He sleeps two hours in the morning and half an hour in the afternoon. He has never been sick a day, and is as healthy and good-natured as a baby could be. At birth he weighed only a little more than four pounds and a half. At six months he weighed fifteen pounds. During many of his earliest weeks he gained ten and twelve ounces a week.

I really can't tell you how much the letters mean to me. When I see little folks the age of mine refusing to go to bed until midnight, and making other demonstrations of temper, I begin to realize what a big, wonderful work you are doing. The first year truly is the foundation—if we lay that right we will save ourselves untold troubles later, both in illnesses prevented and childish willfulness controlled.

I am enclosing a picture of my boy when he was eight months old. It is only a snapshot, but it shows his real Better Babies' smile. Mrs. A. F. K., Nebraska.

THIS is but a tardy acknowledgment of my receipt of the letters from you. How the first one, with its cheerfulness, did encourage me! It really awakened something in me which had, I guess, been asleep.

and made me aware of the wonderful thing which will come to me in the spring.

The fact is, I had been putting other things first, and was feeling sorry that we were not in our own home, and it seemed so many other things ought to come first. Now I do feel differently, for, after all, one's own little child comes before every other material possession. I am only happy now that my husband's people are so very kind to me, and really wish us to stay here, and, with the kind, considerate, and loving husband I have, I am content to wait until, as John Burroughs says, "My own shall come to me."

I have a competent doctor already engaged. He has the reputation of being the best in confinement cases. With so much love and care I surely ought to be very happy. I am living up to the instructions in the pamphlets, and, outside of indigestion spells, am in very good health.

I shall enjoy the rest of the letters, and this is only to tell you that I do appreciate them. Mrs. R. E. C., New Jersey.

I WISH to express my appreciation for the letters I have received these past months. My husband shared them with me, and we called each big yellow envelope an "O. B. Joyful." Before my questions were formed an answer came to fill my wants.

I am sorry we overlooked sending the enclosed post card sooner, as we sadly missed our "O. B. Joyful" this month. I am enclosing fifty cents to be enrolled in your list, so I may receive all information possible. Mrs. W. W. J., California.

I WANT to thank you for all those dear motherly letters you have sent me, and to tell you what a comfort they have been to me. Each letter seemed like a real heart-to-heart talk with a person who really understands.

Our little man arrived—a fine, big boy, weighing nine and a quarter pounds at birth.

Your letters before his arrival were of so much help to me that I am enclosing the registration card and fifty cents in stamps for your monthly letters of instruction on the care and feeding of babies under one year of age.

Many thanks for "What Every Mother Wants to Know About Her Baby." It has already answered several questions that have come to us in the care of our little one. Mrs. F. P. W., California.



His Better Babies' smile



Who says a bath's not fun?

What the Better Babies Bureau Is And how to secure its help

THE EXPECTANT MOTHERS' CIRCLE: Any woman eligible, whether she is a subscriber or not, may become a member, receiving each month a letter of advice on the care of herself and the preparation for her baby. Several practical little pamphlet circulars showing designs for maternity dresses and a common-sense layette are some of the helps sent with the letters. No matter at what period you enter, everything from the first month will be sent. No mention of the Better Babies Bureau is made on the envelopes in which the material is mailed. Enclose a self-addressed envelope with Fifty Cents in stamps, for postage, and state what month you expect your baby.

THE MOTHERS' CLUB: Every mother of young children is eligible and need not be a subscriber to join. Pamphlets, together with monthly letters of instruction on the care and feeding of babies under one year of age (covering such subjects as colic, constipation, weaning, teething, etc.), will be sent to any mother who sends Fifty Cents in stamps and states the age of her baby. There are also leaflets giving diet lists, and other helps for babies from one year of age to three years. This literature is all included in the Mothers' Club's monthly service, but if the letters are not desired the additional literature will be sent for Ten Cents. A self-addressed stamped envelope will bring a prompt reply to every inquiry. Address all inquiries to

BETTER BABIES BUREAU

FARM AND FIRESIDE

381 Fourth Avenue, New York City



No. 150. Embroidered
Georgette and Tulle
Combination \$18.95

No. 120. Fine All Wool
French Serge \$23.95

No. 151. Fine Embroidered
All Wool French
Serge Dress \$16.95

Fifth Avenue Styles—Direct from the Maker—Saves \$5 to \$10

Send Today for Your Free Copy of THE HAMILTON CATALOG FOR SPRING 1920

The Newest Fifth Avenue Styles!

These are not the usual "mail-order styles." They are the very same garments we are showing in our five-story Fifth Avenue building—the same frocks the best-dressed women in New York are buying by hundreds. Every one is new, smart, and distinctive—just the sort of garment you've longed for.

Little More than Wholesale Prices!

With prices still going up, a saving of \$5 to \$10 on every garment is certainly worth while. By buying from us—the manufacturers—you save the middleman's profit. 200,000 pleased customers are now making this great saving. Couldn't you use the extra money too?

Actual Photographs From Life!

And every coat, every dress, every blouse is shown as it actually looks when worn—not as an artist hopes it will look. It is photographed from a living model, and the camera never lies! Over 300 of these photographs are reproduced by Rotogravure in the Spring catalog. Be sure to see them!

Our More than Liberal Guarantee!

You cannot lose by buying from us. If a garment is unsatisfactory in any way, return it at our expense. We guarantee everything—even the fit. You can exchange it for another garment or have your money refunded without question. A trial costs nothing—postage is prepaid!

DRESSES, \$9.95 up SUITS, \$16.95 up COATS, \$9.95 up
MILLINERY, SWEATERS, FURS, WAISTS, SKIRTS AND SHOES

THE OBJECT of this advertisement is to have YOU send for our catalog. No need to write a letter. A postcard will do it. Send it TODAY

BE CURIOUS! Even if there is nothing you need just now—get this beautiful book anyway and enjoy the latest Fifth Avenue styles. Remember, it's FREE

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GARMENT CO.

Mail Order Department P2, 307 FIFTH AVE.
NEW YORK CITY



Why use Coal or Wood?

Turn a Valve and Cook or Heat

THE OLIVER OIL-GAS BURNER makes any cooking or heating stove a gas stove. Burns coal oil (kerosene). No coal or wood. Cooks and bakes better. Cheaper. Keeps your home warmer. You regulate flame. FITS ANY STOVE ANYWHERE. No fires to start, no ashes, no chopping, shoveling, poking and dragging of coal. Saves hours of work and loads of dirt. Simple. Safe. Easily put in or taken out. No damage to stove. Lasts a lifetime. Thousands of delighted users. In use eight years. Money-Back Guarantee. Free literature.

AGENTS WANTED
OLIVER OIL-GAS BURNER & MACHINE CO.
1321 N. 7th St., St. Louis, Mo.
Western Orders Shipped From Frisco.

The Oliver Oil-Gas Burner makes 2 gals. oil equal 97 lbs. coal

Be Careful What You Wash Your Hair With

Most soaps and prepared shampoos contain too much alkali, which is very injurious, as it dries the scalp and makes the hair brittle.

The best thing to use is Mulsified coconut oil shampoo, for this is pure and entirely greaseless. It's very cheap and beats anything else all to pieces. You can get this at any drug store, and a few ounces will last the whole family for months.

Simply moisten the hair with water and rub it in, about a teaspoonful is all that is required. It makes an abundance of rich, creamy lather, cleanses thoroughly, and rinses out easily. The hair dries quickly and evenly, and is soft, fresh looking bright, fluffy, wavy, and easy to handle. Besides, it loosens and takes out every particle of dust, dirt and dandruff.



Cleaner Brighter Prettier Furniture

Furniture or woodwork cannot possibly be pretty if it is dull and lifeless, or if it has a bluish cast, or is gummy or dust laden.

If you would have your furniture as bright, as clean and as sparkling as it was when new, use



It cleans as it polishes and brings out the natural beauty of the grain of the wood.

It produces a high, hard, dry, glass-like lustre without hard rubbing—so hard and dry that it does not get gummy or sticky or collect dust.

O-Cedar Polish is sold by all dealers, in convenient sizes, 25c to \$3.00. Your satisfaction is guaranteed, or money refunded.

Drop us a postal card for our interesting booklet, "How to Keep Your House Clean with O-Cedar Mop and O-Cedar Polish," by Sarah J. MacLeod, Instructor of Household Science, Pratt Institute, Brooklyn, N. Y.

CHANNELL CHEMICAL CO.
Chicago Toronto London Paris

Varying the Bread Pudding

By Marion Brownfield

THAT old standby, the bread pudding, so thrifty a way of using up odds and ends of stale bread, will doubtless stay popular even though it is no longer unpatriotic to use bread freely.

However, when one must include it rather often in the menu during the winter and early spring, when fruits are both scarce and expensive, a variety of flavors and combinations is welcome.

Of course, the plain, everyday variety of bread pudding is never to be despised when made of the best materials, the correct proportions of egg, milk, sugar, and salt, well beaten and blended with the crumbs, a few raisins scattered through, and a delicate flavoring of nutmeg finishing it before it is browned toothsome in the oven. To be first-class, even this simple recipe must be made from stale crumbs, well soaked before baking. Hot milk will soak them thoroughly and quickly, when one is in a hurry. A dot here and there, through the bread crumbs, of butter and one level teaspoonful of baking powder will make the pudding extra good.

No bread pudding must be cooked with any but moderate heat, for too intense temperature will make the egg and milk "whey;" that is, separate from the pudding and make it distinctly two parts—a solid bread part and a watery sauce.

A COMPANY touch for this simple pudding is made by beating the white of an egg to a stiff froth with one tablespoonful of sugar, one-fourth teaspoonful salt, and a drop of any preferred flavoring, and adding it as a meringue in big spoonfuls here and there over the top, or frosting it smoothly over after the pudding is baked, and then placing it in the oven once more to brown for just one minute. If half a glass of currant jelly is spread first over the top of the pudding before the frosting is added, the subsequent minute's baking makes it deserve the name of Queen's Pudding, so delectable in flavor. A chocolate cake icing put on, and allowed to harden as the pudding cools, is also an attractive change.

The other ways of varying the bread pudding come under three heads: flavorings, combinations of other materials, and sauces.

Flavorings make a world of difference, and if the housekeeper is one of those who cleverly realize that quite a number of flavorings cost no more in the long run than using one or two extracts over and over again by replacing the same flavoring as soon as it is used up with a similar bottle, she will experiment with new flavors in her bread pudding. Extract of almond, for instance, is a fine flavoring for bread pudding.

Rose, lemon, pineapple, vanilla, maple, and caramel are all suggestions for a nutmeg substitute in flavoring. When brown sugar is combined with the pudding, either caramel, maple, or cinnamon is particularly nice.

Combinations for the bread pudding include nuts, shredded cocoanut, cocoa or grated chocolate, peanut butter, apples, bananas, and such dried fruits as prunes, dates, and figs. Canned fruits that transform the pudding are apricots, peaches, blackberry jam, and orange marmalade. Recipes for a few of these combinations follow:

PEANUT-BUTTER BREAD PUDDING

Grease a baking dish, and place alternate layers of bread crumbs and peanut butter to the top. Omit the raisins, moisten with one pint of milk to which has been added one well-beaten egg, one teaspoonful of baking powder, and one-fourth teaspoonful salt. Sweeten to taste. Bake in a moderate oven and serve half warm.

CHOCOLATE PUDDING

Soak the bread crumbs in one cup of milk to which has been added the well-beaten yolk of an egg, four tablespoonfuls of sugar, two tablespoonfuls of grated chocolate or twice as many of cocoa, one-fourth teaspoonful salt, and a grating of nutmeg. Bake in a moderate oven, and frost with a meringue made from the white of the same egg used in the pudding. When eggs are scarce, this pudding can be successfully made with cocoa left over from a meal, plus the usual milk, but the egg omitted. Another variation is to use four tablespoonfuls of molasses instead of cocoa in this same recipe.

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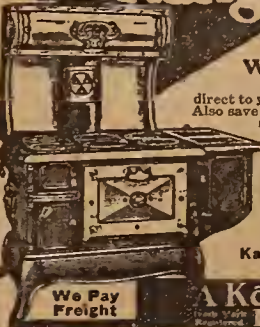
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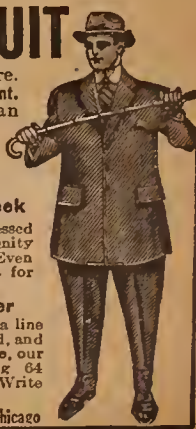
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APPLE BREAD PUDDING

Variations of this recipe are frequently called Brown Betty, and it is a very good way to use up a bit of left-over apple sauce. However, either raw or cooked apples may be combined with the bread crumbs. If the raw fruit is used, be sure it is a "cooking" apple, and slice it very thin, so that it may be well cooked. Butter the baking dish, and place first a layer of crumbs and then apples in turn until the top is reached. Graham bread is nice in this recipe. Sprinkle every layer of both fruit and crumbs with brown sugar and one teaspoonful of cinnamon, using the proportion of one-half cupful brown sugar to two cupfuls each of bread and apple. Flavor also with one quarter of a grated lemon rind, add one-fourth teaspoonful of salt, and if the apples are not very juicy moisten with a little hot water. Bake thirty to forty minutes in a moderate oven, covering at first to prevent burning. Serve warm with the following sauce:

VANILLA SAUCE

$\frac{1}{2}$ cup sugar 1 tablespoon flour or
 $\frac{1}{4}$ teaspoon salt cornstarch
1 cup boiling water 1 tablespoon butter
1 teaspoon vanilla

PEACH SOUFFLÉ

Peach soufflé is a pudding served cold, which is really better made of stale cookies, cake, or crumbs from sweetened breads such as buns or coffee cakes. The pudding dish should first be filled with a layer of stewed or canned peaches. Over this sprinkle a good thick layer of the crumbs. Make a cornstarch custard, using the yolks of two eggs and enough cornstarch to give a good thick custard consistency. Pour this hot over the peaches and crumbs. With the whites of the eggs make a lemon-flavored meringue. Place this on top of the custard and brown delicately in the oven. Apples, bananas, and oranges are all equally delicious when used instead of peaches in this recipe.

ORANGE MARMALADE PUDDING

1 cup bread crumbs 1 cup orange marmalade
1 cup flour lade
1 teaspoon baking $\frac{1}{2}$ cup sugar
powder 1 egg
 $\frac{1}{4}$ teaspoon salt Milk to moisten

Soak the crumbs in the milk and egg, to which has been added the sugar and salt. Dredge with the flour, which has been finely sifted with the baking powder. Then with a tablespoon fold the marmalade lightly through the mixture. Bake in a slightly quicker oven than for the usual bread pudding, and serve with chopped walnut meats over each portion.

BREAD-PUDDING SAUCE

Most all varieties of bread puddings have a sauce that is best suited to their particular flavoring. One sauce not often thought of that can be used in the canning season is the fruit jelly that "won't jell." This is tempting over most any kind of a bread pudding. In the spring thick, well-sweetened rhubarb juice drained from stewed rhubarb, when pie-making, is a good fruit sauce and is no trouble. Either canned or crushed strawberries with sweetening added are a sauce ready to use without further work. When coconut is added to the pudding, lemon sauce is the thing. Maple syrup is toothsome over a plain pudding, and both chocolate sauce and molasses are usually enjoyed by the children, making them forget that it is bread pudding. A few sauces popular with us follow:

CARAMEL SAUCE

Place one-fourth cupful of white sugar in a frying pan, and let it melt without any water until brown or even slightly burnt, then add two cupfuls of boiling water and one-fourth teaspoonful of salt. When cool, beat in one teaspoonful of vanilla.

ORANGE SAUCE

Cream one cupful of sugar and one-fourth cupful of butter together, and beat in gradually the yolks of two eggs. Flavor with grated orange rind and one tablespoonful of orange juice. No cooking is required.

SOUR-CREAM SAUCE

A dainty-tasting sour-cream sauce is made by beating into one pint of sour cream enough light-colored molasses (New Orleans preferably) to sweeten to taste. Add one-fourth teaspoonful of salt and flavor with nutmeg.

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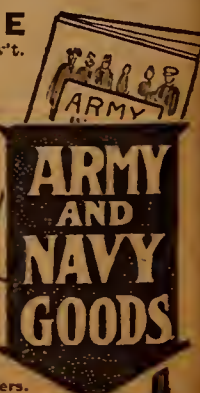
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J. L. H., Ohio.

Our Children's Spending Money

[CONTINUED FROM PAGE 45]

and extras. They were delighted, being under the impression that the sum allowed was larger than they had been accustomed to have spent upon them, although the reverse was true.

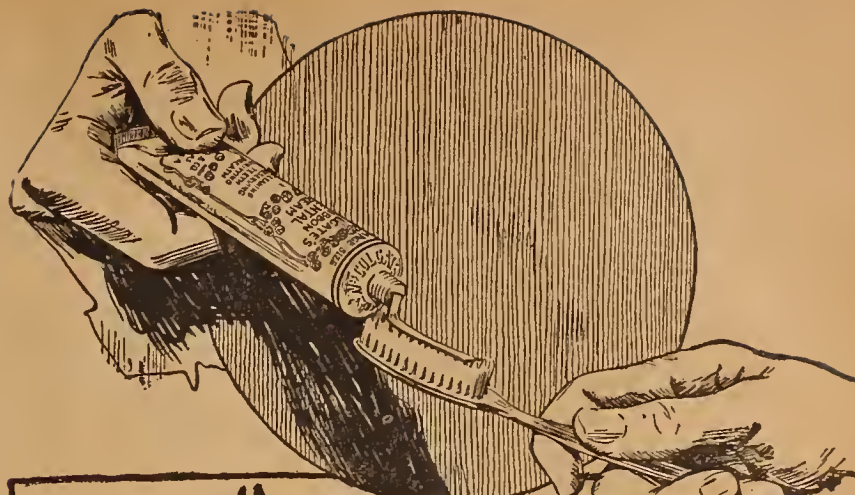
I explained to them that we were trying to carry out a system that was for the good of the whole family; that was, to increase our happiness and prosperity and to aid in preserving the peace and satisfaction in the life of the father they really adored. Then I showed them that any kind of system must be kept perfect at every point, or the whole thing becomes worthless.

They were interested, and looked actually thoughtful. They asked what they were to do if things they "had to have" cost more than I had allowed for them; how about pocket money if "it happened so" they had to do a lot of treating? "Or suppose," said John triumphantly, "prices went up and up and up? Looked like they were going to."

I had my answers all ready. Things that cost more than one can pay must be done without; in the matter of treating, one must decide how far one can go, and accept only the limited amount of hospitality that one can return; and if the prices go up and up, tastes and requirements must go down and down. In case of great necessity, exceeding of the budget in one direction must be met by a corresponding cut in some other. For instance, if a friend had to be treated to-day, one could cut out the expected trip to the movies to-morrow.

I finished by saying that if John's or Mary's books did not balance at the end of the quarter I would have to make up the difference by taking something out of mine. At this they protested vigorously.

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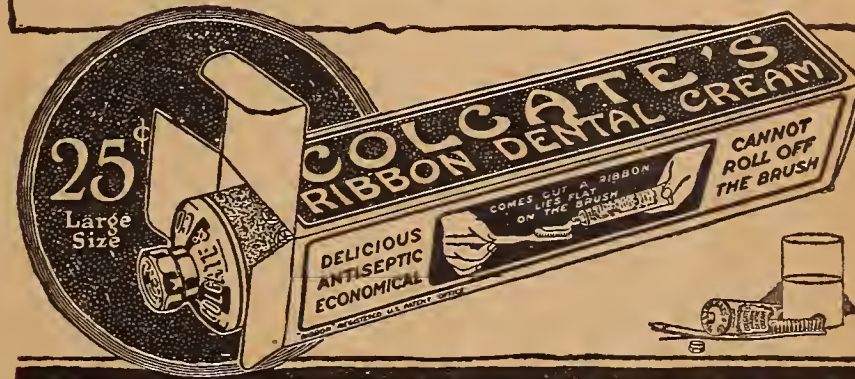


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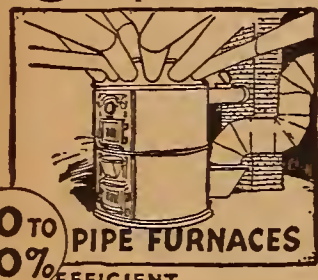
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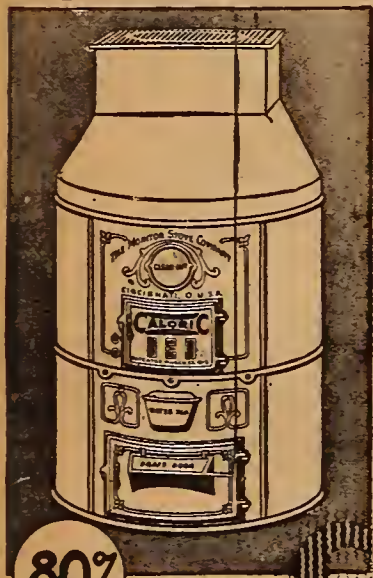
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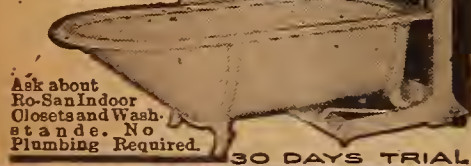
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A United States Department of Agriculture bulletin says: "The best bait usually is food of a kind that the rats and mice do not get in the vicinity. The bait should be kept fresh and attractive and the kind changed when necessary."
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E. S. WELLS, Chemist, Jersey City, N. J.

Cupid Astride a Mule

[CONTINUED FROM PAGE 44]

not talk behind people's backs. You know it! You sent him away from New York. You—"

"Oh, I see! When are you going to marry Girard?"

It was like a blow full in the girl's face. It was a sudden and complete revelation too. She knew the man before her now for what he was. She saw the sneering selfishness, the commonness.

"Dr. Fleming," she said, "I hope I may never see you again!"

"Not even at the wedding?" he asked. Then he turned and walked quickly away. Eyes blazing, she watched him until he turned in the main walkway and disappeared up the hotel steps. Then she sank down on the bench, digging the gravel of the walk with the tip of her parasol. Here were two men, her closest friends she had thought, and she had found them both—but her mind would not finish the thought, she could not think of Girard and Fleming together.

"Oh!" she said wearily. "Oh!"

WHEN she returned to the hotel for lunch Dr. Fleming had gone. Mrs. Waring explained that he had merely stopped over for a few hours on his way farther South. She also looked keenly at her daughter, and Agnes knew her mother understood.

But Dr. Fleming was merely an incident. Even while she talked to him her mind was dwelling subconsciously upon her humiliation—humiliation because, as she now knew, she had given her heart to a man unworthy of her. She was tortured by the fear this man had divined her love. She blushed painfully when she reflected that she might have revealed the state of her feelings to Philip Girard.

Lunch over, she grew restless. She was young, healthy, high-spirited. She could not sit there at the hotel and brood. She had the clerk call for a horse.

"I'm not afraid of horses," she explained. "The more spirited he is the better."

She mounted the magnificent black the groom brought her, and galloped through the sleepy town, and out into the country. Her color returned, and her poise, as she rode. She was a mile out of town when she saw coming toward her a boy on a mule. The boy was belaboring the mule. Her indignation at the sight made her look at him closely as he approached, his head bent low over the mule's neck. The boy glanced up—

"Davy!" she cried, and reined in her horse. "Davy!"

Davy could not speak for joy. She felt like hugging him. Here was a true heart, a simple heart, guileless and devoted. Agnes smiled into his eager eyes.

"How did you get here, Davy?"

"Run off," he gasped. "Run off from Mr. Girard."

The crimson mounted to her cheeks at the mention of Girard's name.

"But how did you find the way?"

"Me? I come by the sto'. I turned out at old man Skelton's—the old man's allus settin' on his po'ch. I struck this here main road by the blasted pine. I been here befo'."

Subconsciously Agnes made a mental note of the directions.

"Oh, Davy, I'm so glad to see you!"

"An' me you. I ain't the only one nuther—Mr. Girard, he'd be glad to see you."

"Don't mention his name to me, Davy!" she said quickly.

"Have you an' him had a—fuss?"

Davy pleaded. "He come down here sick; he ain't well now, Mr. Girard."

"Is he very sick?" she asked before she knew.

"Yes'm, pretty bad off—down-hearted."

"I should think he might be. Davy, don't let's talk about him. How have you been?"

"I been a little broke-up 'bout Mr. Girard. Did you see that gal Susan yistiddy?"

Again Agnes flushed crimson, and her eyes flashed.

"You seen her then. I didn't know whether she was lyin' or not. Don't never tell nobody I said it, Miss Agnes, specially Sam Long. But you can't believe nothin' that gal says."

Agnes was breathing hard. Her horse was pawing the sand. Davy's face was deadly earnest.

"She tries to flirt with ever' man who comes. Don't tell Sam Long I said it. Ever' other man's been fool enough to be took in by it but Mr. Girard. So she got

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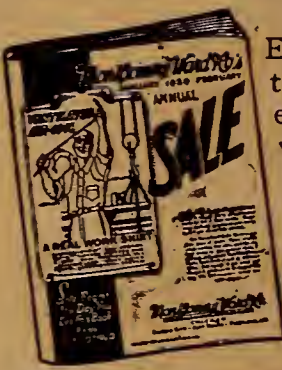
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Buffalo, N. Y.



"The Little Nurse for Little Ills"

mad with him an' raised hell—trouble."
"Davy, Davy!" She was panting, eager; the world was swimming round. "Are you telling me the truth?"
Davy raised his right hand solemnly to the sky. It was before the season of thunderstorms. Perhaps he was shrewdly conscious of that fact.
"If it ain't the truth," he said, "I hope the Lord will strike me dead with lightning!"
There was a pause following this terrible invocation. The sky above was magically blue and lofty. No bolt descended from its dome. The seal of Omnipotence was placed on Davy's utterance.
"Is he very sick?" she pleaded.
"Yes'm; awful."
Again there was silence. Into the girl's sense broke the song of a mocking bird. She looked up. There he sat, a little black speck on top of the tallest oak.
"What are you going to do, Davy?"
"I gotta give Pete a rest. I've rode him like he was a race horse, instead of a plug of a mule. Tried to throw me three times. I'm a-goin' to my kinsfolk, the Simmonses that live in town."
"Then will you come to the hotel?"
"Yes'm—in 'bout a hour."
"I just came yesterday, Davy. I intended to ride over and see you. Before I leave I will. Is—is Mr. Girard still at the lodge?"
"Yes'm—all packed up to go to-night."
"To go? I thought you said he was sick!"
"That's why he's goin'—just come back from a visit to a doctor. I don't think he rests easy thar at the lodge. He's skeered of the front po'ch—he thinks it's haunted. He won't never go out thar."
"Davy!"
"That's the way me an' Will's figgered it out. He ain't never been out thar since he come. Goin' back to town?"
"Not yet. I'll ride on a little way—this is such a splendid horse. You go to the Colonial Hotel in an hour, and ask for Mrs. Waring and her daughter. I'll see you again. Davy, is he thin?"
"Yes'm; powerful thin—like a skeleton. I'll be gittin' 'long now. Giddap, Petel!"

IT IS highly probable that when Agnes I told Davy to report at the hotel in an hour she fully intended to be there. But the road lay before her, broad and white to the bottom of the hill, then turned elusively to the right, inviting inspection.
The day was perfect—one of those March days arrived ahead of time. The sun, a little past its meridian, warmed her shoulders, and was reflected from the road into her face with a foretaste of summer.
Agnes was happy. As the woman of yesterday had plunged her into bitterness, so this boy to-day had raised her out of it. Youth is ready to believe, to be happy, to be joyous.

She jogged along, rising rhythmically to the trot of the shining black. A farmer driving into town looked at her radiant face, raised his hat, then turned in his seat to look at her again. She rounded the curve. The road lay up a gentle slope, with low woods on each side, dominated by the lofty pines, that rose singly here or there or in groups. The horse took the hill at a gallop. At the top she reined him in.
The road plunged down another hill, and turned once more to hide its course. The hills, the little farms, the patches of woods, lay before her; and far away, melting into the sky so that the horizon could not be marked, rolled hill after hill, ever bluer and bluer. Agnes trotted her horse down the hill.

As she galloped up the next slope a cloud drifted between her and the sun.
"Is he thin?"... "Like a skeleton."
Agnes shuddered. The cloud passed, the sun shone, but the joy did not come back. "Philip," she murmured tenderly, "Philip."

At the bottom of the next hill a swift little creek darted out of overhanging bushes, glided under the bridge, and disappeared into other bushes that bent over it. On the bridge Agnes stopped and looked down into the water. Everlastingly it flowed, searching always for the river that searches in turn for the sea. In its gliding depths she caught the distorted reflection of a cloud, and raised her face.

A nebulous white patch, dizzily high in the air, seemed to float across the range of



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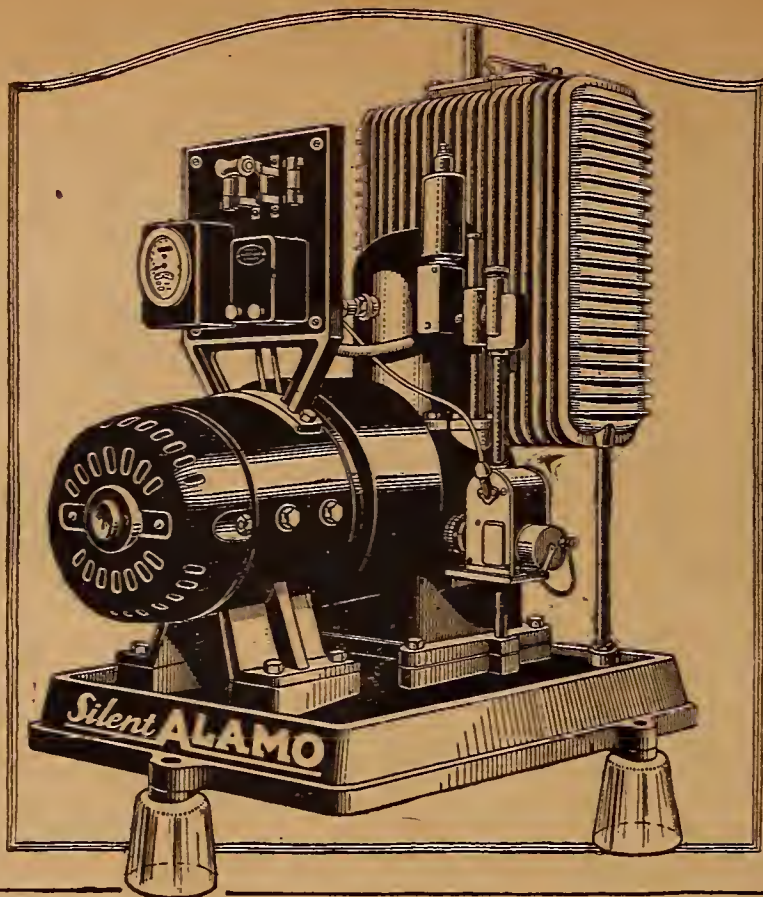


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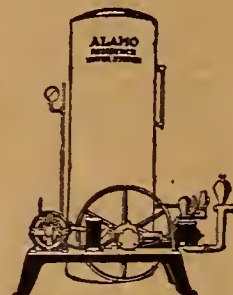
a safety point the motor automatically stops. Injury to the motor from these sources is impossible.

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her vision just to show how infinitely lofty the sky was above it. In the vastness of the distance she seemed to be caught up, to become a part of nature about her and within her.

She sat in a sort of trance. Except for the calling of killees in the bottom, there was no sound but the gurgle of the creek caused by a rift below the bridge—a sad little complaint, it seemed, of the waters, checked for a moment in their onward course. Because the distant sea called, this stream obeyed. And love, the force in human nature comparable only to the force of gravity in inanimate nature, called to the woman on the big black horse.

"He ain't never been on the po'ch. He thinks it's ha'nted. He's low down in his mind."

Agnes rode to the top of the hill. Beside the road was a sign: CAMDEN SIX MILES.

Had she come six miles? She looked at her watch. The hour since she had left Davy has passed. She would be too late to see him. She might as well ride a little farther. She spoke to the horse, and he plunged forward.

He galloped magnificently, gloriously, like a winged horse. A flock of foam flew past her. The trees, one by one, in stately procession, marched by. A soft wind fanned her cheeks, hot and flushed. Her breathing was deep. Her whole nature expanded.

SUDDENLY she drew the horse to his haunches, and his feet scattered the sand over the leaves to the side of the road. Here rose a great pine that had been killed by lightning. Its skeleton arms it stretched mutely against the blue of the sky. Some of the bark still clung to the trunk and showed where the deadly bolt had descended. So rapid had been her progress that the tree seemed falling toward her.

A road turned off to the right. At the fork was another sign board: CAMDEN TWELVE MILES.

She looked down the branch road. Not once did she look back. A young farmer in a wagon was approaching. Agnes waited until he reached her.

"Are you going to Camden?" she asked, smiling.

The farmer tipped his hat.

"Yes, mam."

"Would it be too much trouble to go to the Colonial Hotel and tell Mrs. Waring there that her daughter has gone for a long ride, and may not be back till late?"

"No, Miss; I'm going to the hotel anyhow."

The farmer drove on, and Agnes turned into the branch road and loosened the reins. Again the powerful muscles under her began to throb like the pistons of an engine. The bridle was covered with foam. Down the road she flew. The bushes grew close here. They brushed her skirt and arms. One loosened her hat. She pulled it off. Faster and faster galloped the splendid animal. To her he became a sort of fate, relentlessly bearing her on.

There was no settled purpose in her mind. But somehow it seemed to her that since she left New York her flight had been straight, instinctive, like the flight of a homing pigeon.

In the fields people were plowing. In the bottoms they were burning brush. She saw them stop to look after her. She passed little cabins with rows of negro children in front, their fingers stuck in their mouths, staring at the lady galloping wildly past.

Yes, that was old man Skelton sitting on his porch, his stick between his knees; and that was Grandma Skelton in her bonnet, out in the garden setting out potato plants. The old man called, the old woman straightened up, and they followed this glimpse of young life out of sight with their dim old eyes.

Like the wind she flew by Gant's store. There was nobody on the porch. A woman within looked quickly out of the window—then ran out on the porch; but so swift was the rider, so transitory the glimpse, that even her black, keen eyes could not be certain.

Agnes wheeled into the road to the lodge. The sun was higher than it had been on that other day. The field was brighter where he had looked into her eyes. And now—now—her heart began to fail!

She reined in the panting animal. Nineteen and three-quarters miles lay behind her; one little fourth of a mile lay before her. She had come too far to turn back. With wildly beating heart—she had not known until now how wildly it beat—she pushed the horse on.

[CONTINUED ON PAGE 75]

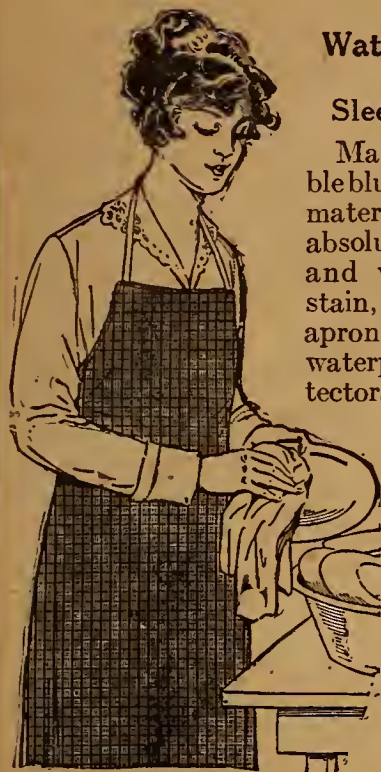
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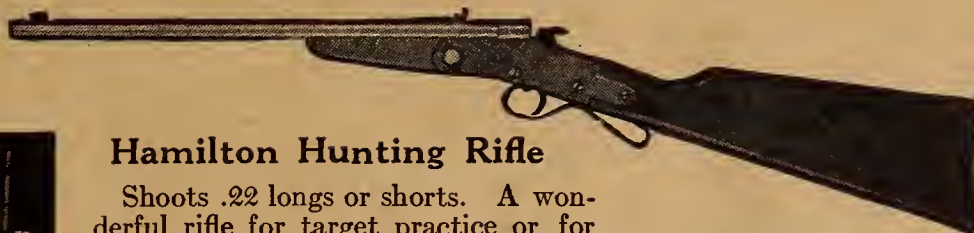
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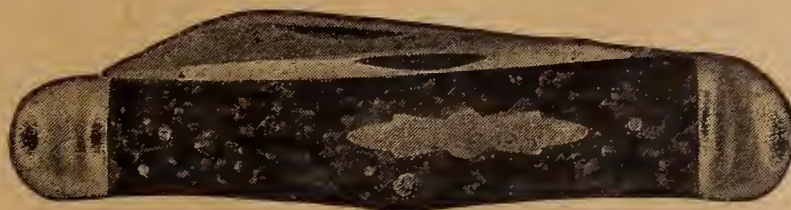
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The above illustration shows the exact size of the knife. Carries both the manufacturer's and our own unqualified guarantee. Contains three blades of the highest grade steel; a general utility blade, a stock blade, and a leather punch blade. The stag handle is strongly reinforced with a brass lining. A high quality knife for every-day use. With reasonable care will last for years. Reward No. 1008, Stag-Handled Punch Knife, sent postpaid for 5 one-year subscriptions to *Farm and Fireside* at 50 cents each (total remittance \$2.50).



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Will keep your lunch moist, clean and appetizing. The Icy-Hot bottle, which fits in the upper compartment, keeps coffee or cocoa piping hot, or a cold drink ice cold, as you prefer. Metal case handsomely enameled in tan. Reward No. 1007, Handy Lunch Kit, sent postpaid for 10 one-year subscriptions to *Farm and Fireside* at 50 cents each (total remittance \$5.00); or 6 one-year subscriptions at 50 cents each, and \$1.00 in cash additional (total remittance \$4.00).

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No. 25 Planet Jr. Combined Hill and Drill



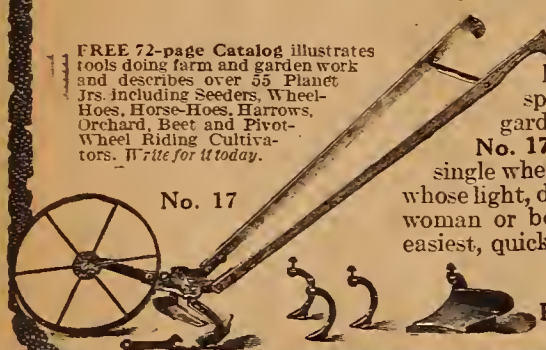
Planet Jr.

Seeder, Double and Single Wheel-Hoe, Cultivator and Plow sows all garden seeds from smallest up to peas and beans, in hills or in drills, rolls down and marks next row at one passage and enables you to cultivate up to two acres

a day all through the season: A double and single wheel-hoe in one. Straddles crops till 20 inches high, then works between them. A splendid combination for the family garden, onion grower or larger gardener.

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many advantages. The Lumber that's Wasted Costs Just as Much as the Lumber that's Used. The only possible way to reduce present high prices of lumber and labor is to save the usual waste. The Aladdin System prepares all the lumber in our mills ready to be nailed in place. Waste of lumber is reduced to less than 2%. Cost of labor is reduced 30%. One man will do in six days, with Aladdin materials, what it requires ten days to accomplish without Aladdin's System.

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Why We Like Farm Life

By Ethel V. Brown of Nebraska

TWELVE years ago, with a handful of worldly goods and a great love for the country, my husband and I began life together on a rented farm. We started with two cows, three calves, a team of good horses, eighteen hens, twenty-five shotes, and enough corn to feed them out. In addition we had about one hundred dollars in cash with which to furnish our little home. There were only two rooms to furnish, but we were as happy as if we lived in a mansion.

We went in debt for another team of horses, a set of harness, a wagon, and our farm machinery. Husband had a new buggy too, which was not paid for.

To-day we have a farm and home of our own, fairly well improved, and four darling children.

We rented the first four years, moving twice. Crops were fairly good. Then we bought our own farm of 160 acres. As there were no improvements whatever, it was necessary to build. We built a small house with kitchen, pantry, living-room, one small bedroom, and a small porch, which we screened in; dug a well and put up a windmill; built a shed barn with room for six horses, and a hen-house that would accommodate 100 hens, doing most of the work ourselves. We also had to fence our pasture and hog lots.

The first few years we had good crops, which helped us to get on our feet. Four years ago, owing to poor health, we decided to rent the farm and move to town.

We soon realized that we had not bettered ourselves any. So the following spring we moved back to the farm, and it seemed like a prodigal's return to get back. The renter had grown careless and indifferent to our interests. The place had been farmed very poorly, and the fences were down here and there.

Several years before we had planted a small orchard of about 50 trees, but when we came back there were only about half of them left. The renter had allowed the stock to run over them and break them off.

Owing to the increase in our family, we built on to the house the following year, adding four rooms with three closets and a nice large porch, which was later screened in. We also built a new barn, 32 by 40 feet, and a garage. The last three years crops have been very poor, owing to dry weather, hot winds and, in one instance, hailstorms. So it has been rather hard sledding for us, especially since we have had an unusual amount of sickness.

But we are planning and hoping for a good harvest this year, which will put us on our feet again. We always raise a good garden, and have some to sell. Then we milk several cows, and with our chickens

it amounts to a neat little sum at the close of the year. I aim to preserve enough fruit to run us through next winter, and as many vegetables as I can. But there is one thing we have learned from sad experience, and that is, you cannot expect to have any degree of success with hogs and chickens unless you have a good place to keep them in. There is another mistake that too many farmers make, and that is, leaving too little pasture land. We have only 25 acres of pasture, and find that we have to rent pasture every summer, and it is getting very hard to find. Many fields that are plowed would be worth far more in pasture, on account of their being so rough.

There are a few disadvantages to country living that I hope to see remedied, and the

chief one is our country schools. Too many are of the opinion that we can farm successfully without an education. Some will say, "Look at John Smith, he can hardly write his own name, and see what he has done!" Yes, he has succeeded; but doesn't it look reasonable that if he had had the advantages of a good education he might have accomplished

FORESTRY does not interest the wandering farmer. But that man who has the vision of making his farm a home for his children and his children's children will plant trees and will look on the wood lot as a permanent asset.

still more? This is one reason that so many farmers have moved to town—to give their children a better education than the rural schools can offer. Farmers must wake up to the needs of their children. Too many of them take more interest in their hogs and cattle than they do in their sons and daughters.

For this reason only, we are planning to buy a home closer to town, where the children can drive to town school and still live on the farm, for we all love country life.

The country has its disadvantages, but so has the city. My heart sometimes aches for the city lads and lassies who are denied the privilege of listening to the early morning songs of the birds, or gathering the flowers in the meadows and woods as they lift their faces to the sun. Is there anything in the world more beautiful than God's out-of-doors, with its fields of waving green, its flowers and trees? And is there anyone who does not love to watch and listen to the brook as it babbles away to join its mother river?

With electric lights, water works, furnaces, motor cars, rural routes, and telephones, we can have things just about as convenient as our city cousins.

Farm life isn't a long trail strewn with roses. It has its thorns as well as the city. But when husband and I get ready to retire from active life it will be a little vine-covered cottage among the trees, with groups of flowers here and there, and where we can look out over the fields and hills that we love.

Are Rats Stealing Your Profits?

DISPROVING the theory that the domestic cat is inadequate to the task of ridding the farm home of rats, Frank Lutz of Cawtawba County, North Carolina, by the aid of the family "mouser" succeeded in exterminating 516 rats, a feat entitling this youthful pest killer to state championship honors. The partnership between the boy and cat was real, and their warfare was even more deadly than the poison gas of the war.

By way of emphasizing the destructiveness of the pests, here are a few outstanding facts: The number of rats on any farm or plantation will easily quadruple the number of persons. Great Britain computes the upkeep per rodent yearly at \$1.80. A Washington, D. C., merchant discovered that within two

weeks rats had subtracted 71 eggs from a tub containing 100 dozen.

An Iowa farmer reported to the Biological Survey, U. S. Department of Agriculture, that the rodents destroyed in one winter 500 bushels of corn, which was stored in a crib. Another farmer reports that rats robbed him of an entire summer's hatching of 300 or 400 chicks. Cane growers in Porto Rico estimate a damage of \$75,000 a year by the gnawing of sugar cane.

Computing the upkeep of the rat as one-half cent per day, the U. S. Public Health Service concludes that the sum of \$180,000,000 a year is wasted by the depredations of the pest. This computation is based on the assumption that there is one rat to each person.

From this you will see that rats and mice really do count. A few raids on their strongholds with a ferret, or a good dog or cat, might save you a lot of money.



Frank Lutz and his champion rat

S. R. WINTERS.

Two Veteran Grafters

THEY tell us there were two of them in this wizardly trick, but Henry Hartman ran away from the camera man, and when he said, "Look pleasant," Uncle Henry Flater was the only one caught with the goods.

These two old-time orchardists of Hancock County, Ohio, connived together for the purpose of grafting on an "honest to goodness" Golden Sweet apple tree, in the rear of the Flater homestead, and now the sturdy, seventy-five-year-old tree bears thirty-one apple varieties, and a half dozen of the best pear varieties besides.

A whole apple orchard growing on one



Henry Flater and the tree which bears thirty-one varieties of apples

tree! Beat Cousin Luther Burbank? Yes, a mile, if you please, if you just stop to listen to the varieties of apples that these two Uncle Henrys are plucking this season from this experimental tree. Every twig upon this veteran tree put forth fruit, thanks to the spraying, fertilization, and nurturing which it received, for no bugs, scales, or fungus are even allowed to alight upon its precious anatomy.

Just listen: Yellow Transparent, Summer Sweet, Red Astrachan, Tetofski, Maiden Blush, Duchess of Oldenburg, Fall Pippin, and Autumn Rambo keep mellowing until frosts arrive. Then winter varieties come on with English Rambo, Baldwin, Banana, Delicious, Grimes Golden, Winter Maiden Blush, Wealthy, Wagoner, Pewaukee, Northwestern Greening, Jonathan, Winesap, Cathed, Northern Spy, Stark, Gate Apple, Rome Beauty, Wolf River, Belle Flower, Arkansaw Black, Mackintosh, and King Tompkins.

It would take an acre of orchard to plant all these varieties, now, wouldn't it? Going it one better, this tree is bearing this year along with all these apples the following varieties of pears: Bartlett, Duchess d'Angoulême, Flemish Beauty, Clairgeau, DeNantes, Seckel, Winter Nellis.

Old Uncle Henry, aside from practicing his wizard art upon this venerable tree, has grafted tomato vines upon potatoes, and grown both crops upon one vine, and he has the largest, sturdiest grapevines with the fullest fruitage we have ever seen in all our travels around over American farms.

GEO. W. BROWN, Ohio

Getting His Goat

ONE hot August day a small darky was dragging a billygoat up the street. The goat hung back, and the darky was sweating and swearing, much to the amusement of bystanders. Finally the darky, worn out and ready to cry, said:

"Looke yar, white folks, if you all know any way to make this goat go I wisht you would."

Just then a doctor stepped up and said: "Boy, do you want that goat to go?"

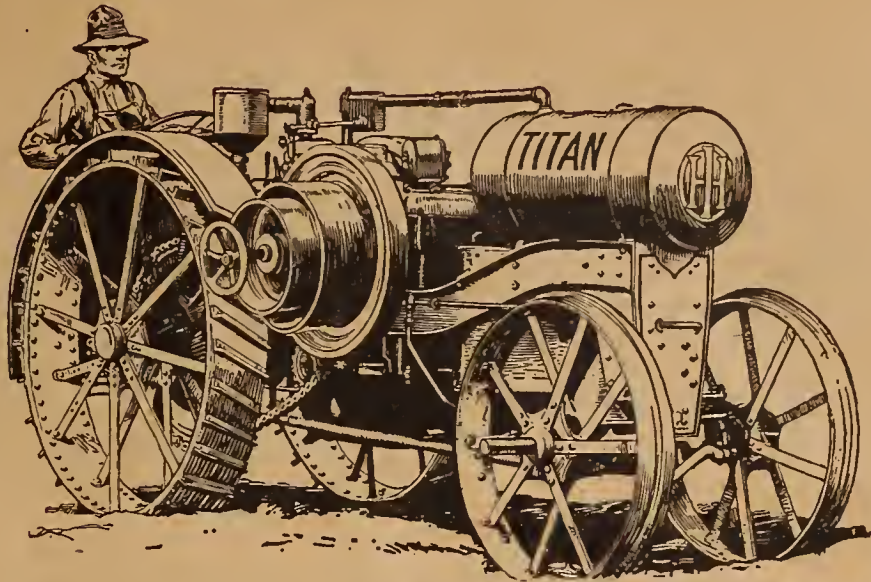
"I sho' does, boss."

The doctor took a small bottle and poured a few drops on the goat's rump. The goat let out a bellow, butted the darky over, and tore over the hill. The boy got to his feet, looked after the goat, then at the doctor.

"Say, boss, whut dat stuff cost whut you drap on de goat?"

"Oh, about a nickel."

"Well, drab about a dime's worth on me, 'cause I sho got to catch dat goat." G.M.B.



Machines are the New Toilers

TODAY labor is restive on the farm as elsewhere. Good old brawn and muscle are not so dependable as once upon a time. Your farm may have felt the pinch of the famine in labor and it will feel the pinch again.

April will be here soon. Then the old familiar peak-loads with all their worry and toil will be crowding after each other until the frosts of October. How will you meet the 1920 emergency?

One thing only can put an end to the farm-help famine and to the food-call of the cities, and that is—Machines—More Machines—and Better Machines.

Eighty-nine years ago the McCormick invention of the reaper—the seed from which the Harvester

Company grew—put the labor of six men into the hands of one man and thereby opened doors into a vast new agricultural future. Today the farmers are calling to their aid many and marvelous farm machines which are the descendants of that first reaper.

This Company is standing by to help in the emergency. It is well fitted to do so. It has a far-reaching plan of machine distribution through many branch houses and thousands of dealers, and it draws on an eighty-nine-year-old fund of experience.

The Full Line of International Farm Machines is concentrated in charge of a dealer near you. Talk things over with him. Go to him for labor-saving power, and modern labor-saving machines to be run with that power—and for International Service.

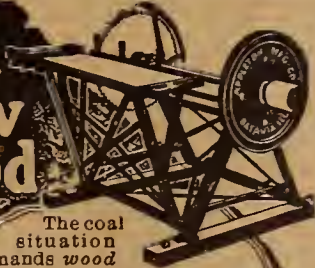
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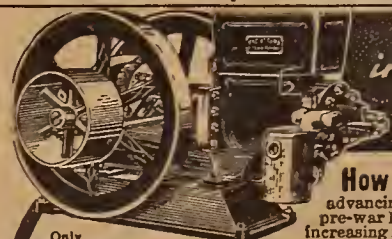
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—the Best Seeds Grown
Give them a trial. 5 pkts. Vegetable Seeds, 10c; 5 pkts. Aster, Pinks, Verbena; Monstrosa, Glory and Orchid Flower, also 10 sorts Spencer Sweet Peas, 10c; 5 House Plants, 25c; 5 Begonias, 25c; Catalog and pkt. Giant Pansies, 3c. A. C. ANDERSON, Box 5, Columbus, Neb.



Smoke Your Meat the "WRIGHT" WAY

Thousands of Farmers are Using Wright's Condensed Smoke (made from seasoned Hickory Wood). A small brush, thirty minutes and a \$1.00 bottle Wright's Smoke, smokes a barrel of meat. Smokes it thoroughly and gives the meat a delicious flavor. No fooling with fires. No danger of meat spoiling. No drying out or shrinkage. Easier, Cheaper, Quicker and better than using a smoke house.

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Clubs Keep Kids Happy

SPEAKING of boys' and girls' club work, I think there is much significance in the result of the inquiry made not long ago by the Department of Agriculture through its many county agents in the South. According to the agents, 10 to 50 per cent of farm boys who were dissatisfied are now content to stay on the farm as the result of club work. The clerical job in town loses some of its glamour when the farm boy learns he can make more money on the farm, and that the clubs provide a way to social good times too. The club boys soon acquire property of their own, and before long they have bank accounts. In Oklahoma 4,736 club boys own \$6,963 in thrift stamps, 7,454 boys own \$92,255 in baby bonds, 1,616 boys own \$13,600 of Liberty bonds. The 13,806 Oklahoma club boys own war securities amounting to \$112,818. Fifteen thousand boy club members in that State have bank accounts, club property, and war securities totaling in value \$247,186.06, or \$16 each. Many of their fathers have never had bank accounts. J. R.

My Hens to Pay a Fair Profit

[CONTINUED FROM PAGE 7]

over these reports and noting the comparatively few high scores made by the light-weight breeds, and the growing number of pens of the heavier breeds that are making high and medium high scores, the conclusion cannot be avoided that the quality of heavy laying is already well established in many thousands of flocks widely distributed over this country. Not only this, it is now as easy to find foundation stock possessed of official heavy-laying records among the Rocks, Reds, and Wyandottes as among the Leghorns, Minorcas, and Anconas. Should anyone doubt my statement, let him carefully examine a number of the yearly reports issued by the various laying contests. Generally speaking, the entries of American breeds and Mediterranean breeds are approximately equal, and while the light-weight breeds may be able to show a larger number of top-notch individual layers, the heavy breeds come in strong on high average production of the pens entered.

Another goal that now seems within our reach when making over our laying stock is to breed for a longer life of laying. Instead of renewing our laying flocks every year at great expense of feed and labor, our aim must be to imbue our young stock with such vitality, as well as inherited laying quality, as will make possible two and three years of profitable egg production. If we make our goal 400 eggs in three years from each hen of our commercial flocks, say 160, 130, and 110 eggs respectively, we can dispense with rearing at least one half the young stock ordinarily required, and our net returns will not need to suffer. To succeed in this it will not be sufficient to handle our chicks correctly from the shell to the end of the third laying year; we must make our plans long before the chicks break the shell, by excluding from our breeding pens every bird having the slightest physical imperfection.

BEFORE closing this account outlining some of my poultry experiences and observations, requested by FARM AND FIRESIDE, I want to leave with its poultry readers this conviction, based on my own operations and what I have gleaned in recent journeys embracing over a dozen different States:

The poultry business, like other lines of activity, has of necessity had to face about, and become in truth a business, in place of hit-or-miss hen play of the past. But now, followed rightly, it is possible to realize from \$5 to \$6 per hen from flocks of commercial size, and to have one third of the income represent net return for the owner's time and labor expended. This of course holds true only with those experienced in poultry-keeping, and who are willing to pay the price of success.

My own modest poultry operations during the past three years of high-cost poultry supplies have realized better than the figures given, counting returns on a market-egg basis.

After making three entries of my stock of Barred Rocks, descended from my original foundation breeding birds, in different laying contests, I am also glad to report my belief that it seems possible to continue to maintain heavy production in successive generations, by making use of several lines of breeding within the original strain without going outside that strain for new blood.

A Hoghouse You Can Build

WHEN a farmer has just a day in which to build a hoghouse, he doesn't usually want to be bothered with a lot of studying over plans and dimensions before he starts in. I happen to know a man who had a lot of odd lumber on his place that was left from building a corncrib, and so he naturally couldn't expect to construct a shelter with a set design. He did the next best thing, though, and put some of the stuff together into what his neighbors termed a good house, and did it in a single day.

In the first place, he wanted a hoghouse for his spring litters, to move around onto fresh ground as he chose. With this in mind, he gathered up all the shiplap left from the corncrib, and, after looking around, found an old cellar door, still in good shape. For a dollar he got two fair-sized beams, at the lumber yard, that had been car stakes in shipping. And in addition to buying more 2x4's to go with what he already had, he bought a pound of eight-penny nails and two pounds of tins. The rest he furnished from around the farm.

Two frames for the ends were first made, and the car stakes laid down to receive them. The stakes were fastened down solidly with crosspieces and corner braces, after the distance had been determined. With the 10-foot ridgepole cut, he proceeded to set up the ends, and to brace them in place temporarily, then cut 2x4 crosspieces for the middle. The shiplap which he had was 14-foot stuff, so he planned to have the sides run up and down, and cut them 7 feet long. This made the ends have a slant length of 6 feet 8 inches, and the spread at the bottom was the same.

The plan of the structure was to have it large enough to house two litters, and so braces and a partition were next put in, and the ends all boarded up but the doorways, as in the picture. The only thing left to do was to cut and nail on the siding, leaving a place on one side, where the shiplap only came down halfway. By bending some old tin into a V-shape, and slipping under the ends, a trough was made for the cellar door, which he put on with hinges, to serve as an extra door in good weather. The ridge was also covered with tin.

The place was water-tight from rains, and it could be moved anywhere on the farm in a jiffy. He gave this rough estimate of what the house cost him:

230 feet shiplap at \$35.....	\$8.05
75 feet 2x4 pine culled at \$20.....	9.00
2 pieces car stakes.....	1.00
Labor, nails, and cellar door.....	4.35
	\$22.40

P. A. POTTER



A comfortable home for hogs, built in a single day

A Useful Home-Made Skid

THE most useful implement on my farm is a home-made skid, or sled. This skid is very handy to use for many things, but chiefly for hauling in corn fodder where one man has to do all the work. It saves much lifting, as one can drive alongside the shock and shove on a whole shock at once. It is also useful for bringing in firewood or hauling logs, posts, etc., from the wood lot.

It is made of two 4x6-inch pieces, ten feet long and four feet wide, and can be floored solid with any kind of lumber. Holes are bored at each end for upright stakes. I use about four-foot stakes, and also have pegs about 18 inches high, against which I leave a wide board to use when hauling manure, etc. Holes are also bored in front end, through which twisted wires are fastened for attaching two chains, about 2½ feet long, each with a hook which fastens to clevis of doubletrees. The under parts of front ends are sloped off, sled fashion.

This sled can be easily made by any farmer, and once owned he will never be without one again.

E. JEWELL, Arkansas.



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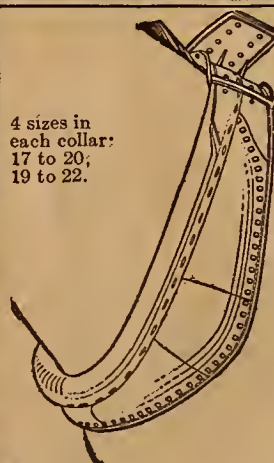
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\$7.50

were your own machine. Test the wonderful Melotte.

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You are not to send one cent until you have used this Great Belgian Melotte on your own farm and thoroughly made up your mind that it is the separator you want to buy. Keep it for 30 days—use it just as if it



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Self-Balancing Bowl

See why this bowl can't vibrate nor get out of balance—why it can't cause currents in the cream—why it can't re-mix milk with cream. Compare the Melotte Separator with any other—test them side by side. See for yourself which works easiest—which is most profitable—which operates at least expense—which is most sanitary and easiest to clean. Then send your skim milk to the creamery—let them prove which separator skims the cleanest.

Easy Payments After 30 days, when you are completely satisfied that the Belgian Imported Melotte is, by far, the best cream separator to be found any place in the world (a big statement, but true), then send only the small sum of \$7.50. Settle the balance in small monthly payments. The Melotte pays for itself from your increased cream checks. Mail the coupon now—today.

READ! Easiest to clean. Few plain discs, all alike, go back in bowl in any order. Bowl chamber is PORCELAIN LINED. Has smooth, rounded surfaces—no crevices. Easy to clean as a china plate. Can't rust. One-half less tinware to clean. Easiest to turn. We guarantee that the 600-lb. capacity Melotte turns easier than any other Separator of 200-lb. capacity. Bowl spins 25 minutes after you stop cranking unless you apply brake. No other separator needs a brake.

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Without cost to me or obligation in any way, please send me the valuable book, "Profitable Dairying." Also send me the Melotte Catalog which tells the full story of this wonderful separator and Mr. Jules Melotte, its inventor.

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Your hardwareman carries the 915 Hasp in stock.

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How We Handle Bulls

WE HAVE raised many bulls on our farm, and I do not know whether it is due to our method of raising a bull or that our bulls are of a good-natured strain, but we have seldom had an ugly or vicious one. It is a fact that the older a bull gets the more likelihood of his getting vicious. There are, however, certain things that should be taken into consideration by every bull raiser.

No matter how gentle a bull may look and act, look upon him with suspicion, for any bull, no matter how well you know him, remains a rather dangerous and unreliable farm animal. When cleaning his pens or using him for service, it is best to keep an eye on him and walk backward out of the pen. This may sound ridiculous to a reader who has full confidence in his bull, but it deserves recommendation, for one minute of carelessness may result in hours of regret. On our farm we have many pet animals, but never a pet bull. The bull calf is always treated rather hard. He gets his feed, but is never caressed; and when he tries to play he is soon brought back to his place, so that he learns that his owner is not a plaything, but his master.

Teasing or beating should not be allowed, for the day will come when he will repay you in his own way. Another important lesson that should be taught early is leading and tying. If the bull is accustomed to these two things while still a calf, he does not know anything else. We ring our bulls when they are about a year old, and teach them to lead with a staff. When these things are left until an older age the bull is liable to be angered and attempt to retaliate.

The young bull that is ready for service should never be kept in a narrow stall or in the dark, for these things certainly are hard on his temper, and are liable to cause difficult handling and viciousness.

A bull should enjoy freedom, plenty of fresh air, and sufficient light. Keep him in a well-lighted stall with an outside paddock, and water him at least twice a day or, still better, have fresh water in reach at any time. It is a well-understood thing that bulls should never be left loose with a herd of good dairy cows.

I want again to urge you never to trust a bull. You can never be sure of what he is going to do. L. DIKSTRA, Colorado

Should You Spray?

MORE positive proof of the benefits derived from repeated sprayings in apple orchards could not be obtained than the following results which New Jersey fruit specialists obtained in the orchards of Senator Henry Ackerson of Hazlet. Three lots of Ben Davis trees were sprayed once, twice, and six times, respectively, and the results were clearly demonstrated to a large crowd at picking time.

The trees sprayed six times yielded 28.3 barrels; those sprayed twice, 16.6 barrels; and those sprayed once, 10.3 barrels. At the current wholesale price this would amount to \$128.83, \$46.00, and \$27.17, respectively. The fruit sprayed once or twice was scabby and wormy, and the foliage on these trees had fallen; the apples sprayed six times were smooth and clean, the foliage was still vigorous, and there were plenty of fruit buds showing. Which all goes to show that you can "get by" with half-hearted spraying, but when it comes to showing profits you cannot hope to stay in the race unless you do. The orchardist who cares for his fruit will win out every time. S. A. M.

"No More Boarders Here"

IF YOU keep hens as a hobby, then what follows will not interest you; but if you keep them for what you can get out of them in the way of profit, most probably it will interest you.

I only had a small flock, 80 birds all told, and when a poultryman looked over them two months ago, and told me to cull out 20 of them, I didn't feel like listening to him. But he talked to me in such a way as to convince me that his advice was good, and I culled out the 20, selling them at \$1.50 each.

Now for results: My 100-pound bag of mash lasted me five days longer—nineteen instead of fourteen—making a saving of 120 days' feed, which will equal a cash saving of \$60, and, despite this culling, I have been getting just as many eggs; in fact, owing to the rest of the birds having more room, the production has increased. Therefore I am thoroughly convinced that the experiment has been worth while.



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NO garage expense, no gasoline, no engine trouble, no big repair bills, no heavy tire bills, no cranking.

Just hop on your Iver Johnson bicycle, get there quick, accomplish your business and be home again in a jiffy.

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Strong truss-bridge frame, seamless tubing of high carbon nickel steel, drop-forged parts, improved scientific "two-point" ball bearing construction both on one axle—runs as smooth as water over the dam.

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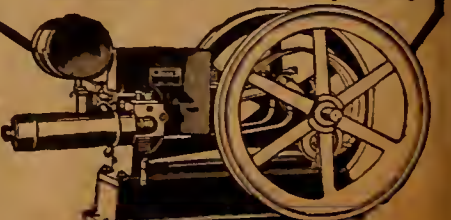
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THIS announces the offering of the last big block of the Canadian Pacific Reserved Farm Lands. Until this block it disposed of you can secure at low cost a farm home in Western Canada that will make you rich and independent. Never again on the American Continent will farm lands be offered at prices so low.

Last Big Opportunity

This block contains both fertile, open prairie and rich park lands in Lloydminster and Battleford Districts of Central Alberta and Saskatchewan. Farm lands on the rich prairies of Manitoba, Saskatchewan and Alberta average about \$18 an acre. Lands in Southern Alberta under an irrigation system of unfailing water from \$50 an acre up.

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The Canadian Pacific offers you this land under a plan of long term, easy payments that is remarkable in the history of farm investments. You pay down 10%. Then you have no payment on the principal until the end of the fourth year, then fifteen annual payments. Interest is 6%. In Central Saskatchewan, Seager Wheeler grew the world's prize wheat. World's prize oats were grown at Lloydminster.

Lands Under Irrigation

In Southern Alberta, the Canadian Pacific Railway has developed the largest individual irrigation undertaking on the American Continent. This district contains some of the best lands in Canada. An unfailing supply of water is administered under the Canadian Government. Prices range from \$50 an acre up on the same easy payment terms. \$2000 Loan in improvements. Twenty years to pay back.

Special Rates for Home-seekers and Full Information

The Canadian Pacific will not sell you a farm until you have inspected it. To make this easy, special railway rates have been arranged. Do not delay your investigation. This is the last great block of Canadian Pacific Reserved Farm Homes. Send today for complete information—without obligation.

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Perhaps you have birds living upon you without returning their board, but somehow you don't feel like parting with them, because you have only a few. And, waxing sentimental, you say you are feeling quite attached to them. Well, then, put it to yourself this way: Suppose those hens were human beings, and they boarded upon you day after day without paying their board money, wouldn't you put them out? You would get rid of them some way. Why not apply the same principle to hens?

When a big fellow in the business loses money, we get to hear about it; and when the money he has lost amounts to \$3,000 to \$4,000, we whistle at the largeness of the sum. But putting the big fellows' losses all together it is safe to say that the total will not equal that which the innumerable little fellows let fall from them every year.

All these losses could be prevented if we went out after the non-layers, and gave proper attention to the other details. There is no money in poultry if we don't give these attentions. So let us all begin; let us small fellows follow the example of our larger brothers, and cull, cull, cull, until we have a flock of layers on our hands instead of drones.

STANLEY MORGAN, New York.

The Last of the Furbearers

THE muskrat is unique among furbearers in that its fur does not become prime until spring. In the winter, when all other animals have thick, glossy coats, the muskrat is at his raggiest. But with the advent of spring, which causes the other animals to shed their coats, the rat's fur becomes prime. Therefore fall and winter caught muskrats have small value; in fact, many States now prohibit trapping them until spring. March and April are the best months for trapping them.

While not naturally a wary animal, the



Set the trap in the right place and cover it well

muskrat has been trapped so much that he has acquired a certain amount of wisdom concerning traps. But his sense of smell is not so keen as to cause him to shy from the odor of iron, therefore I have found that the chief things to be done is to set the trap in the right place and to cover it well. The right place is not just any old spot along a stream. Find a spot where the muskrat has worn a little path, or "slide," where he climbs up the bank to feed. Set the trap at the bottom of this slide, under about two inches of water, cover it with water-soaked leaves, and fasten the chain to a piece of wire weighted with a stone in deep water. With this you need no bait, and when the rat is caught he will plunge into deep water, and the weight of the trap will drown him. This is important, as an undrowned rat will almost invariably gnaw off his foot and escape. The right size trap to use is a No. 1.

If you cannot find a slide, find where tracks show the rats pass, or find one of their holes in the bank under water. Somewhere near here stick a stake in the water about a foot from shore and eight inches above water. A carrot or piece of apple is the best rat bait to be had. Place bait on this stake. Then set a trap at the foot of the stake. The rat will step in the trap while endeavoring to get the bait. If the water is not shallow enough, pile up a few stones or some mud, so that the trap is always set two or three inches under water, and, of course, covered with water-soaked leaves. This is a good set, but my preference has usually been for the unbaited slide set, as oftentimes a sly old mink, in meandering along a stream, takes it into his head to use muskrat slides, and unsuspectingly slides into a trap. **ROBERT E. HEWES.**

Advance Spring Sale New 1920 Models SEPARATORS

A 30 Day GALLOWAY OFFER!

Listen!

Twenty years ago, I was down on a farm in Tama County, Iowa, milking cows and teaching calves to drink skim milk out of a pail. From that time I have had a wide and varied experience in agricultural and industrial lines. We have made many wonderful offers through the farm papers and over 300,000 satisfied customers have profited as a result of these bargains, but I can say truthfully and without hesitation that this special cream separator offer we are making here is positively the highest and best we have ever made. But there's a reason for it. First, because we have added \$1,000,000 new capital to our company, which has enabled us to increase our production so we can make 15 times as many separators as we used to make. Second, because the Cream Separator is one of our specialties. Third, because our factory experts have the

equipment and the production of the new Galloway Sanitary Separator down to the finest point of mechanical perfection in every detail. All parts are made on dies and jigs standardized and alike turned out by the thousands on the most modern automatic machinery, every part interchangeable, insuring great efficiency in production and a separator as good as human brains, mechanical skill and ripened experience can make it. For these reasons and because we sell direct—straight from our factory to you, which any man can see enables us to cut the price right down to bed rock, and save a lot of money in one single purchase even in these days of profiteering and high prices.

That's why I personally want you to answer this ad today so you can get our 1920 catalog and make your own comparisons with any other separator offered you from catalog or store. I invite you, at our expense, to compare the new 1920 Galloway Sanitary Separator in price, design, finish, simplicity, mechanical construction and close skimming efficiency with any other separator sold by anybody any way at any price and we will leave it entirely up to you at our risk to be the judge.
(Signed)
WM. GALLOWAY.

Sold Direct From Factory

This plan saves you the difference between my price and the price of the high-priced separators. I cut out all waste and sell you at the rock bottom factory price. You get your new Galloway Sanitary right fresh from my factory floor. You buy in the most economical way—the modern way of doing business.

Skims Close in Cold or Warm Weather

This new 1920 Separator is not just a warm weather skimmer. But when your cows are on dry feed this New Sanitary Model will skim just as close as when the cows are pasturing. In any weather your separator should always skim up to rated capacity, and particularly in the spring and summer, when the grass is green and the milk flow is heavy, you want a Separator like the Galloway. Then time counts. A few minutes saved in the morning and evening mean just that much more time in the fields.

Trial Test for 180 Milkings

Use and test one for 90 days. Note its strong, sanitary base; Tank of pressed steel; Heavy tinware; Sanitary bowl; Discs separate from each other for washing. Takes only a few of them to skim a lot of milk. Cream pail shelf and bowl vise combined with hinge for lowering. High carbon crank shaft (50 revolutions per min.). Oil bath and sanitary drip pan. 4 good sizes: 375 lb., 500 lb., 750 lb., 950 lb. capacities.

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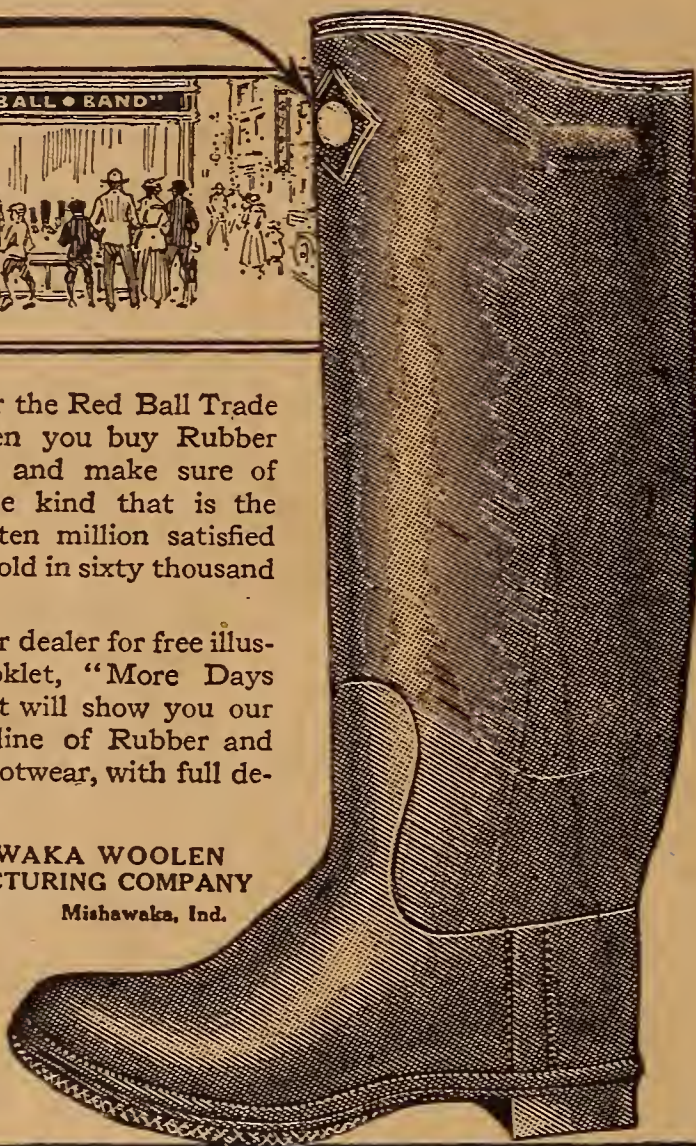


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Put Dayton Airless Tires on your car now and forget punctures, blowouts, pumps and patches. Seven years of service has proven their success and reliability. Over 100,000 are in use today. They don't bounce like a tight pneumatic nor d-r-a-g like a loose pneumatic. They are easy riding—and wear till there's nothing left but shreds.

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I have used a set of Dayton Airless Tires, getting 44,000 miles out of the front and 20,000 miles out of the rear tires, the difference in mileage being due to my overloading my Ford Touring Car by hauling three barrels of oil constantly.

I used the tires constantly, nearly three years, and Dayton Airless Tires make no difference in the wear and tear of a car. I find the engine and steering apparatus as good or better than the average car of like age.

And the satisfaction of knowing that when a person starts he can get somewhere without distress of both body and mind by punctures, blowouts and loss of time is a compensation in this age of progress for any difference in price. The fact is, in the long run, the cost of Dayton Airless is about half the pneumatic cost.

HAROLD T. SMITH,
Assistant Treasurer.

HUMBLE & GULF COAST OIL COMPANY



My Hens Lay in Winter, Do Yours?

By L. A. Reber of Missouri

A GOOD many of our people, especially those who raise poultry on the farm as a diet issue, experience great difficulty in obtaining eggs from the hens during the cold winter days. The last few years, one dozen eggs produced from the flock during wintry weather has commanded a higher price than two dozen during the spring laying days.

It is essential, then, for one to study the necessary food to be given a flock in order to produce satisfactory results. Too many people blame a hen for not laying throughout the winter, when, in fact, they themselves are more to blame in not giving the flock the proper care, attention, and feed that is essential to produce eggs.

If we would only stop to analyze the contents of an egg, we would learn that it contains all ingredients necessary to produce a living object—bone, muscle, blood, etc.—and until a hen gets the kind of food to make these parts, there will be no egg.

Out of a flock of 60 hens, for the past two years, I have been selling 12 dozen eggs a week through the month of January, 15 dozen a week through February, and by the time spring laying days arrive the whole flock is busy, some laying, others hatching, and I would like to tell FARM AND FIRESIDE readers how I get these results in order that they may profit by my experience.

DURING the summer months, whenever we mow the lawn, I immediately gather up the lawn clippings and spread them in the shade to dry. In this way the sun does not bleach the young blades, and they cure a natural green. When thoroughly dry the clippings are stored away in gunny sacks, and hung up to the rafters of the barn or shed until needed.

During the cold winter days, when green food cannot be obtained, they are fed once a day of these lawn clippings, always at midday. It is prepared as follows:

To a peck of the clippings enough boiling hot water is added to cover. This is allowed to stand for half an hour, when the clippings will turn as green as the day they were cut. Then I put bran to the mixture until it produces a mash. When fed to the chickens you would be surprised to see how greedily it is devoured.

In the morning the flock is given an eight-quart pail full of dry oats scattered in a litter of straw, and at night all the corn on the cob that they will clean up. This assures the necessary amount of exercise required for the hens to do their best. Ground alfalfa will take the place of lawn clippings if obtainable.

BEFORE winter sets in, a large load of fine gravel is hauled and put in a neat pile in the chicken yard, and hy spring it is generally gone. Oyster-shell grit is also kept before the flock at all times, and this assures the necessary food for shell production. Unless this is done the eggshell will be of transparent thinness and easily broken when handled.

Of course, it is essential that we pay heed to the good advice offered from time to time in our farm papers, concerning the care of poultry. The flock should be well housed in warm, comfortable quarters in order to eliminate all possibility of frozen feet and combs; for a hen with a frozen comb will not produce eggs, no matter how well she is fed.

Again, their drinking water should be kept lukewarm throughout the cold winter day. This is essential, as an egg is composed of about nine-tenths water, and the flock will not drink enough real cold water to produce the amount necessary for egg production.

I have to buy all the feed for my chickens, and I have kept a strict account of all eggs and chickens sold since January 1, 1919, and since that time they have produced enough to pay their feed during the past winter up to the present time. They also have paid for the feed I have on hand, which will last them for another month, besides having a barrel of cracked corn for little chicks. I have 250 little chicks, the earliest hatched weighing over a pound now, and am over \$25 to the good.

I am still selling from 15 to 18 dozen eggs a week, besides what we use in the house, and I have eggs every morning for breakfast. The eggs here are selling for 40 cents a dozen at the present time, and for the next month all will be clear profit. And I am willing to state that there is money in poultry if we give them the proper care.

To Help You Get Better Prices

By John Thompson

UNCLE SAM'S going to keep in closer touch with his live-stock industry. He's going to count animal noses every month instead of every year. And he will tell on a certain day every month how many head of the various kinds and classifications of live stock there are in every one of our 3,000 counties, instead of only the 48 States, as heretofore. Instead of showing simply the number of horses, cattle, sheep, hogs, and so on, the reports will give them by ages and by sex, and the proportions of breeding stock, growing stock, and marketable animals. They will show also—and this will indicate the progress of the national pure-bred sire campaign—the proportion of pure-bred animals, of grade animals, and of scrubs. More than that, too: things affecting the live-stock industry—the number of silos and what is in them, feed on hand and in prospect, and the condition of pastures and ranges throughout the country—will be reported monthly. This information will be made available to farmers.

What this new plan means to the producer, in a few words, is that he will be put on the same footing as the buyer. All the cards will be on the table. The live-stock dealer will not have an advantage in his private sources of information. By knowing pasture conditions throughout the country, for example, stock can be shifted

from short pastures to regions of more plentiful grazing. This work will be done by the Bureau of Crop Estimates of the Department of Agriculture through its field reporting force of some 200,000 voluntary correspondents. I said the animals will be counted. I should have said estimated, although that means almost the same thing—Uncle Sam's correspondents have become such good guessers. In 1917, and again in 1918, they guessed in advance within five per cent of the acreage farmers planted to food crops. In 1918 their estimates were within two per cent of the wheat production.

Such live-stock estimates tend to stabilize prices by giving advance information of overproduction or underproduction. The certainty of supply resulting from government reports reduces the carrying risks of buyers and dealers, and thereby enables them to pay better prices. The reports also discount biased and misleading estimates that may be issued by speculators. Only one class of men is injured by the government reports—the speculators who fatten on the ignorance of others.

George Washington was a good farmer. When he once needed a farm manager he described the man he wanted in a letter as "above all, Midas like, one who can convert everything he touches into manure, as the first transmutation toward gold."

A Three-Time State Champion

By James Speed of Kentucky

LONA FISH of Madison County, Kentucky, has the unique distinction of having been a three-time state champion in boys' club work. In 1916 Lona became the corn-club champion for Kentucky, the following year he won first honors in the Pig Club, and in 1918 he again led the State, but this time in the Poultry Club.

The boy who can win first place in three different lines of boys' club work in three succeeding years is very unusual. The public when it reads of such a champion is quite apt to picture the boy as somewhat of a genius. In order to see Lona at close range and under ordinary circumstances, the writer visited him on his father's farm to see if he was unusual, and to learn the secret of his very pronounced success.

He found Lona a fine, fresh, country boy with a frank, smiling, and somewhat freckled face—a youngster dressed in blue overalls, like a thousand and one other boys all over the country.

When the writer asked the lad about his initial work in the Corn Club, he said: "Of course I didn't get the championship right away. You see, I had to learn the game, and it isn't a dead easy one either."

Why, the first year, 1913, when I was in the Corn Club, I only raised 65 bushels of corn to the acre. But the second year I got 105 bushels. That 105 bushels to the acre won me second prize in Madison County, and I knew I was on my way for the state championship. The next year I again moved up a peg, raising 110 bushels, and taking first place in my home county. The next season, 1916, I got 114 bushels and 7 pounds, and got the state championship."

When questioned concerning the land upon which he had grown his crop, and the method of cultivation, he continued:

"The land is a small piece of bottom land that has been farmed for about sixty years, and I have grown four crops of corn on it. I always grow rye on my acre that's to be planted in corn for a winter cover crop, so I can turn it under every spring, putting more humus into the soil than I take out. For fertilizer I usually use five loads of good barnyard manure. I cultivate my corn four times with a riding cultivator, and don't set the machine to cultivate more than three inches deep."

"And then the next season you got the pig-club first prize without having to work for a long time, didn't you?" I asked.

The freckled face broke into a smile as Lona replied: "No, indeed. That isn't the way to get a state championship. You've usually got to work several years to get ready. The second year I was in the Corn Club I joined the Pig Club. You see, that was in 1914, and it wasn't until 1918 that I got to be state champion in the pig work. It took me four years to get ready to take first prize in the corn work, and just the same time to do the trick with my pigs."

"Of course, I don't mean that during those four years I didn't get any prizes, because I did. The second year I was in the Pig Club I made enough of a success to get a free trip to the State Fair, representing Madison County. The next year, in

1916, I won several prizes, and I made good money on my pigs. In 1917 I became state champion, with a brood sow and a litter of fine pigs."

Realizing that Lona Fish had been four years in each instance in preparing for two state championships, the writer could not repress a smile as he asked, "Well, Lona, is it the same old story with your winning of the state championship in the Poultry Club last year?"

"Yes," as the freckled face broke into a broad grin; "yes, just exactly the same old story, only a little bit more of it."

"How's that?" asked the correspondent.

"Well, you see, I joined the Poultry Club the same year I started with pigs. That makes it five years' work with my chickens before I was able to get the first prize in the State. Here's how it was: Four years with corn, four years with pigs, and five years with poultry, see?" Then he said, "Don't you want to look at some of my chickens; I've got quite a few now."

Lona got a bucket of shelled corn and called a portion of his big flock of Single-Combed White Leghorns about him, thus allowing the writer to secure a photograph. The boy had on hand over 150 pure-bred hens from which he was securing a large number of eggs. During the present year he has sold many settings of eggs. However, he is not at all content with his flock, but buys extra well-bred baby chicks from time to time, so he may improve his flock as a whole. As the boy chatted about his flock of pure-bred hens, the writer was wondering what other work this lad might have been interested in since he entered the Corn Club in 1913, so he asked:

"Are you in any clubs this year?"

"Sure," came the reply at once; "I'm entered in the Pig and Poultry clubs, but as I've won first in both I'm out of the running this time."

"Have you been in any other clubs?"

"Yes; a lot of times I've been in four clubs at once. One year I was in the Corn Club, the Calf Club, the Poultry Club, and the Pig Club."

After leaving Lona Fish, the writer chanced to meet Robert Spence, the county agent under whom Lona had worked. He told Mr. Spence of the interview he had had with the boy and then asked:

"Has the fellow done anything else besides this club work which would interest the readers of FARM AND FIRESIDE?"

"Yes, he has. He has been of invaluable assistance to me in my agricultural night schools in the hill country near here. At these meetings I needed someone to talk on poultry, so I asked Lona. At first he refused, but I persuaded him to go and talk about what he had done with his own flock. You have no idea what a splendid impression this youngster of seventeen makes upon the people at these meetings."

Whenever the writer thinks of the day spent talking with Lona Fish, and the things which this youngster has accomplished in six years, he has a feeling that the genius for hard work and the saving grace of "stick-at-it-iveness" are the greatest assets in life.

THE codfish lays a million eggs while the helpful hen lays one, but the codfish does not cackle to inform us what she's done, and so we scorn the codfish coy, but the helpful hen we prize, which indicates to thoughtful minds it pays to advertise.

New York Agrigraphs.



Lona Fish and some of his prize-winning hens

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This illustration is an exact copy from Bulletin No. 163 of the Oregon Agricultural Experiment Station showing difference in yield of two plots of ground of equal size. Figure No. 1 shows alfalfa yield where soil was not treated. Figure No. 2 shows yield where Gypsum was applied.



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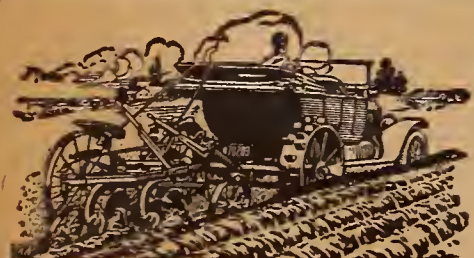


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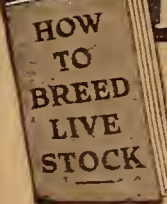
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How I Overhauled My Tractor During the Winter

By Alfred Matthews

KNOWING the failings of human beings, George Washington bequeathed us this advice: "In time of peace prepare for war."

Knowing the failings of traction engines, I will offer you the humble advice: In time of winter prepare for summer.

Some farmers hold to the policy, let well enough alone—if a machine works, why bother with it? They do not think of the loss caused by expensive repairs and delay, often during the rush of harvest. I recall to mind a misfortune that happened to a neighbor which is quite illustrative of this point. A knock developed in one crank box. From day to day you could hear it getting worse, but he was so anxious to plow out a field that he paid little attention to it. Bang! Suddenly the piston shot clear out of the cylinder, bent the connecting rod, broke the piston bell, twisted the brass boxes out of shape, and jammed a hole in the water tank—about \$150 expense for repairs and a three-day lay down to make the replacements. The continual knocking had weakened the connecting-rod bolts to such an extent that they suddenly gave way—a forceful reminder that mechanical conditions never get better by themselves.

Winter is the time to take the whole machine apart, from the governor to the water pump. I had a very convenient little shop, and I developed a system for taking care of my outfits. Every fall when Jack Frost would pull the curtain down on the season's activities, I would consign the tractor to the mechanical hospital for a complete dissection. The shop was about 20x50 feet in size, and afforded room for the separator, tractor, truck, and automobile. It had a cement floor, and when the tractor was run in several 2x8 planks were laid to protect the cement. Over in one corner was a home-made brick forge, and along one side a well-built bench stood ready for service.

Other conveniences included a stationary gasoline engine, mounted on its own individual section of wooden floor, that operated a small line shaft installation for transmitting power to the drill press, emery grinder, and lathe. But one of the best conveniences of all was a hand chain hoist that could be attached by hook and cable to overhead well-trussed timbers. Without that it would have been difficult to lift the truck and automobile motors out of their frames.

FIRST, I would jack the tractor up and put blocks under the frame. Then I used a crowbar on the axles, counter and crank shafts, to "feel" for play, and also observed the gear meshes, which usually told a true story of bearing condition. I removed the governor from its seat, disconnected the connecting rods from the crank shaft, removed cylinder heads, extracted pistons, tore down the clutch assembly, took the pumps apart, disconnected the magneto (which should never be allowed to rest on metal), and then went to work.

In all tractor motors, of whatever make, the piston travels its full length in one cycle, and returns in the other cycle of a complete revolution of the crank. The maximum pressure is approximately at dead center before the down stroke begins. It is obvious that since the explosion occurs at the height of compression, or even a trifle before the turning point in the piston's travel, most of this kick is thrust directly onto the crank-shaft bearings. This thrust against the crank shaft is a terrible jolt, and therefore it is of the utmost importance that the crank-shaft bearings be kept tight, and

that the crank-shaft connection with the pistons be maintained at an absolute right angle. If the shaft is thrust out of line to any appreciable degree, binding will result, and more lost efficiency, with the possibility of a sprung or broken shaft and a serious break-down indeed.

Some transmissions operate through bevel gears, in which case considerable attention has to be given bearings, owing to the two-way corner crowding of the gears trying to get out of mesh, caused by heavy side and end pressures.

TRACTORS do not require so much attention the first winter as they do in succeeding years. But I have always found it good policy to pry shafts up and down and sideways with a crowbar, to see if there is too much play. Another way to tell is by observing how the gears mesh—if there is a tendency to back away it is a sign the bearings are wearing, a very harmful condition, and one calling for rebabbitting of the bearings. Rebabbitting is not a very difficult process. Bearings wear away principally on one side, and by means of jack screws, clamps, and other tools the different shafts may be held in correct positions while babbitt is being poured, after which oil grooves may be chiseled in the bearing surfaces. In some cases, the removal of a shim or two between the bearing halves will suffice.

There are few tractors that pull straight back from the center of the machine.

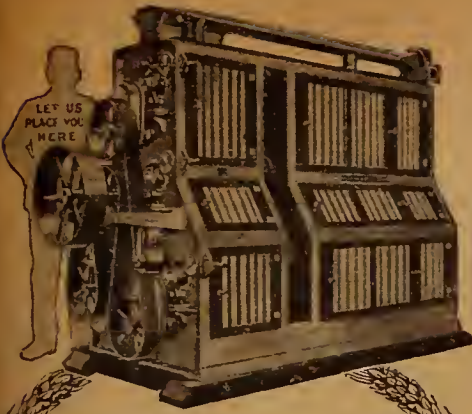
Consequently, side draft wears the front and drive-wheel bearings unevenly, and in case of the latter it is very essential that they be attended to, otherwise improper master-gear mesh is liable to result. I know of one farmer who evidently had not looked at his front wheels for some time, for when

turning around he was very disagreeably surprised to find he was down on one side—on account of side draft one of his front wheels had worn through its housing cap and the wheel, naturally, worked off the axle. Four jacks placed at suitable places, two on each side of the frame, should raise the whole tractor off the floor, and with the aid of crowbars and blocks the axles may be forced into proper position and the necessary work done on the bearings.

The clutch is another heavy-wearing part. It is frequently necessary during the course of a season's run to overhaul this part of the transmission. Unless it is properly adjusted and kept in the finest possible shape, it is likely to prove a never-ending source of trouble.

I was very particular about keeping the pistons and cylinder heads free from carbon deposits. It seems that carbon will accumulate under the rings, in the compression chamber, and on the head of the piston, no matter what may be done to try to prevent it. The pistons must necessarily be well oiled, and this cylinder oil contributes largely to these deposits. That is a condition calling for both summer and winter overhauling. Dirt and oil will also accumulate in the magneto shaft housing, sometimes shorting the circuit. It will be found in the pumps, around the radiator connections, in the force-feed oil reservoir, in the gear oil reservoir; and it must be removed. The governor calls for cleaning and very accurate adjustment. A good acting governor will lengthen the life of any motor. All crank boxes must be thoroughly overhauled and timed with the crank shaft when the pistons are connected up again. This should be the last operation, so that no other adjustments will throw it out of time.





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At a cost of \$3,700 three pumps, 24 units, pails, and pipes were installed. Three units are used to each 50 cows, these being operated by two men, one changing the machines and the other stripping and carrying the milk to the scales in the weighing-room.

Before installing the machines at Elmendorf Farms, two milkers and a boy were required to carry the milk of each 50 cows, the two milkers receiving \$30 a month, the boy \$20. Now only two men are needed for each fifty cows, at \$30 a month. Morgan figures \$18 a month for board and room per man, or 16 cents per hour, and 12½ cents per hour for the boy. Hand milking required five hours a day, while the machine does the work in one hour.

It is interesting to contrast machine and hand operations in milking per cow, as shown by Mr. Morgan's books, in the following table:

Items of Expense	Hand-Milked	Machine-Milked
Upkeep and repairs.....		\$0.03
Washing and cleaning tubes...		.05
Electricity, oil, and depreciation on motor.....		.0225
Interest on investment.....		.0469
Cost of labor for milking.....	\$1.34	.769
Depreciation on milking apparatus.....	.023	.195

Total cost per cow per month.....\$1.363 \$1.1134

This shows a saving of 25 cents per cow in favor of the machine, or \$25 per month for 100 head, or \$1,200 a year on 400 cows. These records represent the average of two years' experience. Extra cost of labor in hand milking is alone enough to make 23 cents in favor of the machine, without taking into consideration the upkeep or depreciation on equipment necessary for hand milking.

Morgan says this is not all the saving, as he no longer needs to keep looking for new hired men. About every pay day he used to lose two men, as hand milking made them tired of farm work. Now he not only is able to produce higher grade, clean, sanitary milk, give the cows better attention, but also keeps his men contented, as they do not need to put in the extra four hours a day on the milk stool. There is no trouble with the bacteria count now.

In two years the machinery has had an upkeep, including all expenses, of \$211.87. This calculated for a month amounts to three cents a cow. E. W. G., New York.

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RECENT comparative tests of the cost of producing beef with a corn ration and with a silage ration have been very enlightening, but there is yet another angle to consider. An analysis of results at Wisconsin, Missouri, Iowa, and Kansas shows that with a corn ration an acre will make 290 pounds of beef, while 637 pounds are produced by the silage ration. In other words, a silo will increase the live-stock capacity of your farm over 100 per cent. By turning your corn, kafir corn, or cane into silage you can double the number of steers your farm will support. These figures are based on the assumption that the average farm will produce 10 tons of silage per acre, and 40 bushels of ear corn. The more productive your land the better the silage will show. Many yields of 12 to 15 tons of silage have been known, and some of the experiment stations have reported as high as 20 to 22 tons per acre. But using the very conservative basis of 10 tons shows the following:

	Pounds Beef per Acre	
	Corn Ration	Silage Ration
Wisconsin produced per acre of land	235 lbs.	499 lbs.
Missouri produced per acre of land	376	654
Iowa produced per acre of land	256	746
Kansas produced per acre of land	294	648
Average	290	637

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J. S.



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TWENTY years of unceasing application has at last produced in the Huber a farm tractor that takes its place with the automobile, telephone, gasoline engine and self-binder, as a perfected utility that is dependable and does its work reliably—

12 H. P. on
Draw-Bar

25 H. P. on
Belt Pulley

**THE
HUBER
Light Four**

Draws Three
Bottoms

Turns an Acre
an Hour

"THE TRACTOR DEPENDABLE"

In every detail of its construction, The Tractor Dependable shows that power-saving simplicity which is the mark of long studied and reliable mechanical design. The Huber Light Four is known everywhere in power farming neighborhoods as the tractor "That always keeps running".

Weight 5,000 lbs.; Waukesha, four-cylinder motor, oversize; Perflex Radiator; Hyatt Roller Bearings; burns gasoline, kerosene or distillate; center draft; two speeds, 2½ and 4 miles per hour.

All spur gear from motor to draw-bar reduces loss of power from friction. High test steel decreases tractor weight. Thus, the Huber is designed to produce the greatest traction pull possible in a tractor light enough to work on plowed ground without packing.

The 1920 Model is now regularly equipped with oversize motor at no increase in price.

Write for booklet "The Foundation of Tractor Dependability".

THE HUBER MFG. CO., 653 Center St., Marion, O.
Canadian Branch—Brandon, Manitoba

Makers also of the Huber Junior Thresher

Interested dealers should write for our attractive proposition

Shall I Buy Grades or Pure-breds

By W. A. Freehoff of Wisconsin

A CARLOAD of grade cows was recently sold by a Wisconsin breeder for an average of \$272 a head, three of the cows bringing \$350 each.

A little time before that another Wisconsin breeder sold his herd of grades at public auction, and the milking cows brought an average of \$195. The highest price was \$265 for a two-year-old heifer.

When we consider that it is an easy matter to buy pretty respectable pure-breds for that amount, the question as to what a grade cow is really worth is a pertinent one.

It is impossible to judge the value of a cow entirely by looking at her. Some cows are great short-distance cows; they will milk like a house on fire for four months, and then dry off rapidly. Others will milk steadily for ten or eleven months, and yield a handsome profit.

If a cow has been run in a cow-testing association for a year it is not hard to figure out her value, always assuming that she will do about as well for the new owner. A grade cow of unusual producing ability may easily be worth \$500, yielding her owner a good investment when bought at that figure, while a cow of only fair production might prove a poor investment at \$100.

One thing is certain, however: good cows, regardless of breed, are in ever greater demand. This is due not only to the high price of feeding stuffs, but also to the high price of labor as well. Dairy farmers, in order to make a profit at all, require the most efficient machine they can get for the production of milk and butterfat. They realize that \$2,000 worth of cows of great producing ability are more profitable than twice the number of poorer cows that may be bought for the same money. The good cows take up less room, require less labor and less feed per unit of milk produced.

If those 20 cows which brought \$272 were tested cows, so that their probable production could be fairly estimated, they might have been cheap at even more money. If they were untested, the buyer took a sporting chance on his judgment.

Accurate production and feeding records are the only accurate yardsticks by which the selling price of a cow may be determined. Production is becoming more and more the yardstick of pure-breds, but

it is the only standard for grade cows.

Thus the man who is in the market for grade cows should be open-minded on the price question. If he finds a cow of good size and pleasing conformation, he should ask the seller for reliable production data. If this data is not available, it is always well to play safe by offering merely a reasonable price, because farmers, under present conditions, are not likely to put their best cows on the market.

As a general rule, when the price of grades approaches that of pure-breds it is better business policy to put in a few dollars more and buy the pure-breds. It is pretty sure that the value of a grade is pretty definitely fixed, while there is no predicting the value of any particular pure-bred cow. She may make an astonishingly large advanced Registry record, or some of her relatives may make their mark, greatly increasing her selling value. A Wisconsin breeder once bought a Guernsey cow for \$115, which later made a record of 981 pounds fat, increasing her value to several thousand dollars.

The Man Who Made Wisconsin Banner Seed State

[CONTINUED FROM PAGE 26]

has summarized the results of the work of the experiment association as follows:

It standardized field crops of the State.

It brought buyer and seller of pure-bred field seeds closer together.

It placed crops in those sections of the State to which they were best adapted.

It increased crop production in the State, without extra labor.

It produced pure-bred seed-grain growers with international reputation.

It has produced crops of special merit, and has filled orders for carload lots of seed grains to be shipped to foreign countries.

It assisted in securing better seed laws, so farmers are less liable to get bad seeds.

It has helped its members grow and disseminate varieties of field crops superior in both yield and quality to any other known varieties.

It caused Wisconsin pedigree seeds to be known throughout the world.

Fill Your Silo From Fewer Acres

The one practical remedy for the high cost of labor is to make every acre produce more—a bigger yield of corn per acre means lower cost per ton of silage. Whether you apply manure or not, your corn needs available plant food—for a quick start—for producing more and better ears to give the silage greater feeding value—and for making big heavy corn, that requires fewer acres to fill the silo.

A·A·C· Fertilizers Make This Possible

They supply the necessary available plantfood—ammonia for a quick start, potash to make stout, heavy stalks and big grain, and phosphoric acid to fill out the grain, reduce the number of barren stalks and bring the crop to maturity ahead of frost.

Our Agricultural Service Bureau has been making farm tests with fertilizer for many years, to determine the best fertilizers for various crops under different conditions of soil and climate. The Bureau issues bulletins dealing with the culture of important crops, the use of lime and fertilizer. The Bureau also tests soils as to their need of lime, and gives advice on agricultural matters. This Service is free. Dr. H. J. Wheeler, formerly Director of the Rhode Island Agricultural Experiment Station, is in personal charge of the Bureau.

Ask for our valuable 56 page book, "How To Make Money With Fertilizer." Our nearest office will be glad to send it free.

The American Agricultural Chemical Company

ATLANTA
BOSTON
BALTIMORE
BUFFALO

CHARLESTON
CINCINNATI
CLEVELAND
COLUMBIA

DETROIT
JACKSONVILLE
LOS ANGELES
MONTGOMERY

NEW YORK
PHILADELPHIA
ST. LOUIS
SAVANNAH, ETC.

Please Address Office Nearest to You



Where Kaiser Bill Once Farmed



This fertile farm near Sivas, Turkey, once owned by the former German emperor, is now operated by the Near East Relief for the benefit of destitute Armenian children

WITH the signing of the armistice one of the most fertile farms in Turkey passed from the hands of Kaiser William to Miss Mary Graffam of the Near East Relief, who has charge of 800 destitute waifs, the victims of Turkish barbarity. There are about 700 acres in the farm, and hundreds of blooded cattle roam the hills, while the rich valleys grow fine tobacco and fruit in great abundance. During the war a caretaker and a staff of peasants operated it, but when Germany was defeated the caretaker, who had power of attorney, turned over the estate to Miss Graffam, who has been a missionary in Sivas for ten years. She identified by deeds on file at Constantinople the identity of the former owner.

The home and industrial school which Miss Graffam has established is teaching the orphans of the Armenian massacres, among other things, better farming methods. Until the Near East Relief took charge, work on the farm was done by the crudest of methods. Wooden plows pulled by oxen

such as were used in the days of Abraham and Lot were employed. Modern machinery and more efficient methods are making the land more productive. We say, Hurrah for the work of Miss Graffam and the Near East Relief!

A. S. W.

WINCHESTER

1866

1920



NEW PRODUCTS AND A NEW POLICY

by J. E. OTTERSON

PRESIDENT WINCHESTER REPEATING ARMS COMPANY

WHEN we decided to branch out into the manufacture of other lines of products, we were not satisfied that we ought to put the name Winchester on Cutlery — Tools — Skates — Fishing Tackle — Flashlights.

Here was a name which had come unblemished through fifty-three years of the cleanest kind of business dealings.

Some held that it would lower the prestige of the name — that we would destroy its significance — if we applied it to more than one line of products. This was given no small consideration.

We wondered if it would not perhaps be better to put these new products out under a new name, such as "Eagle," or "Victory," or something similar.

We have finally decided to call them Winchester. And to make this name mean everything it now means on Guns and Ammunition.

We will not put this name on any product until we are sure that the *quality* is such as to entitle it to be stamped with the name.

And so when an article is handed you with Winchester upon it, it will carry our assurance that it is up to Winchester standards.

When we decided to establish a series of local retail agencies, it was a very great question whether we should let dealers throughout the country put the name of

Winchester on their stores. We determined not to give this privilege indiscriminately.

We have picked out a responsible dealer in each town and offered it to him. And we do not want him to take it unless he appreciates it, and takes the responsibility that goes with it.

If he feels that he can make the Winchester Store stand in his community for fair, honorable, clean-cut business dealings, then we want him to come into this proposition.

On us rests the heavier responsibility of maintaining the prestige, significance, and high standing of the Winchester name in the actual *manufacture* of these new products.

It is with greatest confidence in Winchester artisanship, in Winchester methods and Winchester manufacturing *purpose*, that we have taken this momentous step.

In committing the Winchester organization to the making of these new products to bear the Winchester name, and in extending the use of that name to retail stores, I personally have assumed a great responsibility to the American people.

I feel this obligation keenly.

My confidence in receiving your approval is secure — knowing all that Winchester has done and can do.

Poultry Raisers

You Can Make

Big Money with a Belle City

Because it's a time and labor saver—low in cost—economical—convenient—with a record for fifteen years of unfailing service as a wonderful hatching and brooding outfit.

Get into this profit-paying business now. It's money for you right from the start. Write today for Free catalog "Hatching Facts." It tells how easy it is to make big profits with my

\$12.95 140-Egg Champion
Belle City
Incubator

The Prize-Winning Hatcher with Fibre Board Double Walled construction—Self-regulator, Thermometer and Holder, Copper Tank, Safety Lamp, Deep Nursery, Egg Tester, etc. When ordered with my \$7.55 Hot Water, Double-Walled 140-Chick Brooder—guaranteed to raise the chicks—making a complete hatching outfit—both only **\$18.50**

Freight Prepaid East of Rockies towards Express

and allowed to points beyond. Used by over 815,000 successful poultry raisers. With this Guaranteed Hatching Outfit your success is assured. Save time—Order now—Share in my \$1,000 in prizes—or write today for my big, Free catalog—"Hatching Facts," and get all the particulars. Jim Rohan, Pres.

Belle City Incubator Co.
Box 100, Racine, Wis.



Sell More Poultry

Help feed the world and make more money for yourself with time-tested

SUCCESSFUL Incubators and Brooders

27 years' experience. Cabinet-made—scientifically ventilated. Hot water heating plant. Write for Free Catalog—ask about poultry and eggs, and "Successful" Grain Sprouters. Famous booklet, "Proper Care and Feeding of Chicks, Ducks and Turkeys." 10 cents.

J. S. Gilcrest, President and General Manager
DES MOINES INCUBATOR CO. 61 Second St., Des Moines, Iowa

PROFITABLE POULTRY
62 BREEDS Pure-Bred Chickens, Geese, Ducks, Turkeys. Fine Northern raised, hardy and vigorous. Fowls, Eggs, Incubators at Low Prices. Pioneer Poultry Farm. Valuable New Poultry Book and Catalog FREE.

F. A. NEUBERT, Box 314, MANKATO, MINN.

Poultry Book Latest and best yet! 144 pages, 215 beautiful pictures, hatching, rearing, feeding and disease information. Describes busy Poultry Farm handling 53 pure-bred varieties and BABY CHICKS. Tells how to choose fowls, eggs, incubators, sprouters. Mailed for 10 cents. Berry's Poultry Farm, Box 39 Clarinda, Iowa

POULTRY MILLER'S GUIDE
—tells all about raising chickens, care, feeding, etc. Contains beautiful colored pictures of best paying varieties and best layers, sent absolutely FREE.

Eggs and Poultry for hatching at special low prices.
J. W. MILLER CO., Box 27, Rockford, Illinois

American Poultry Almanac FREE. How we breed the 300-egg hen. Plain scientific facts. Monthly routine. Feeding for winter eggs. How we win laying contest medals. Hopewell Farms, Box P, Hopewell, N. J.

SOFT-HEAT-NATURE'S WAY

Bigger Hatches—Stronger Chicks
Moist warmth, new principle in incubation, hatches every good egg. No suffocation in shell, no cripples hatched by the

Porter SOFT-HEAT Incubator
Egg chamber round like hen nest. Every egg heated evenly in all temperatures. Heat, moisture, ventilation automatically adjusted. Eggs turned in two minutes without removing or lifting tray. Center Heat. More fresh, moist air insures success. Children get same good results as experts.

Reduces Cost 300 Per Cent
One filling, 3 to 4 quarts of oil, completes hatch. Enormous fuel saving. Result of 25 years' successful incubator building. Iron-Clad Guarantee. We Ship by Prepaid Express. Send postal for illustrated book on Soft-Heat Incubation.

PORTER INCUBATOR CO. Box 432 BLAIR, NEB

Gem Hatcheries and Brooders
Lead all. Guaranteed. 362,000 now in use. Cost only \$1. Thousands using them are raising 600 to 1,400 chicks a year. This lady raised 1,522 in 1919. Send stamp for Special Catalog.

GRUNDY,
U. S. Expert, Morrisonville, Illinois.

Money in Poultry Small Investment. Big profits. Our stock pays best. Thousands of prizes at big shows, best layers, lowest prices, all varieties. Big Free Book tells all about it. Write today.

CRESCENT POULTRY FARM, Box 31, Des Moines, Ia.

PLANS FOR POULTRY HOUSES.
ALL STYLES. 150 ILLUSTRATIONS. SEND 10 CENTS. INLAND POULTRY JOURNAL, Dept. 10, Indianapolis, Ind.

YES! RAISE PRACTICALLY ALL OF YOUR CHICKS. Incubator or hen hatched, in one of the cheapest and best brooders made. For success, economy, durability and profit, all who raise chicks should write for circular TODAY.

E. O. PERRY, 42 W. MONTCALM ST., DETROIT, MICH.

Ironclad

TRADE MARK

The Iron Covered Incubator

BIGGEST HATCHING

Value Ever Offered

Investigate the Ironclad Incubator before you buy. Get my new catalog and learn why the Ironclad is the safest and best incubator. It tells how they are made and why they are better. My special offer of iron covered incubator and roomy brooder for only \$17.25 freight paid east of Rockies

30 DAYS' TRIAL
Money Back If Not Satisfied
is the greatest incubator offer of the season. You can use the machine for 30 days and if not satisfactory, we will refund your money and pay return freight charges. Machine come to you complete, ready to use, and accompanied by a

10 YEAR IRONCLAD GUARANTEE

Both for \$17.25
Freight Paid East of Rockies

150-EGG Ironclad Incubator
Don't class this big galvanized iron covered, dependable hatcher with cheaply constructed machines. Ironclads are not covered with cheap, thin metal and painted like some do to cover up poor quality of material. Ironclads are shipped in the natural color—you can see exactly what you are getting. Don't buy any incubator until you know what it is made of. Note these Ironclad specifications: Genuine California Redwood, triple walls, asbestos lining, galvanized iron covering. Large egg tray, extra deep chick nursery, hot water top heat, COPPER tank and boiler, self-regulator, Tyson Thermometer, glass in door, and many other special advantages fully explained in free catalog. Write for it TODAY or order direct from this advertisement.

IRONCLAD INCUBATOR COMPANY, Box 51 RACINE, WIS.

MADE OF CALIFORNIA REDWOOD
150 Chick Brooder

Chicks Like Cleanliness

MOST hard-and-fast rules respecting manure removal are made only to be broken. Some commercial poultry keepers—successful ones too—clean the roosts only twice a year, in spring and fall, and are skeptical of the practical features of any other policy. It is not slovenliness on their part, either. They dispense with dropping boards and let the manure accumulate in a boarded-off space on the ground. Occasionally they throw absorbents on the pile.

A big Plymouth Rock poultry farm is proud of its efficient manure-removal system. Through a carefully planned combination of convenient roosts and overhead metal litter carrier, it removes the manure of 1,600 birds and deposits it in an outside, covered concrete manure pit, all in thirty-five minutes. On a farm where Leghorns and Reds are both kept, manure of 500 birds is removed in ten to twelve minutes.

At two times frequent manure removal from dropping boards is of especial importance. One is the warm months when mites may become a big drain on the flock. The practice of some of the commercial poultry farms is to clean daily, and to paint the roosts every fortnight with a coal-tar disinfectant. Of the two measures, they declare daily manure removal does more to defeat the mites.

Special roost-cleaning tools are on the market, or they can be improvised at home. A good scraper helps to make the job easy. When the henhouse has board floors, at cleaning time manure will sometimes be found dried to the floor in spite of the deepest litter. Water will soften the material, and permit a thorough cleaning job. At cleaning times it always is a wise precaution to disinfect.

The plant-food value of poultry manure is appreciated everywhere. The poultryman close to town or city, or in a district where intensive agriculture rules, never has trouble selling it at a good price. The range of prices is 50 cents to \$1.25 a barrel, with considerable quantities sold at \$1. More poultry keepers choose to use it on their own land. It must be stored in a protected place, as it quickly loses its value when exposed to the weather.

JOHN T. BARTLETT, Colorado.

They Won with Hard Work and Alfalfa

JAMES A. LEWIS of Clear Creek Valley, Colorado, is sixty-one years old now, and counted a success. Lots of younger men around there look on him as "lucky." But he is not and never has been "lucky." He failed more than once at farming. He attributes his final success to the fact that he had "the courage to fail"—that is, to fail without giving up.

The history of almost every successful man, farmer or otherwise, is a series of intelligent failures—that is, they learned from their failures how they might succeed. "In nine farming failures out of ten," said one good Colorado farmer to me recently, "it is not a poor farm, but poor farming that is to blame." Lewis's story proves that true.

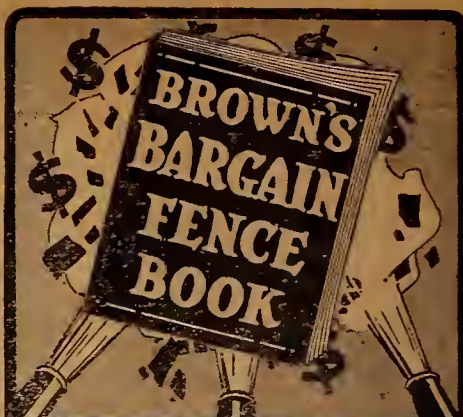
An ox team brought Lewis to the Rocky Mountains from Iowa in 1860. His father took up a homestead in the valley between the North and South Table Mountains.

In 1878 Lewis married, and took out a pre-emption claim in Larimer County. He failed in his new place the first year, because he did not get his irrigation ditch out in time. He gave up trying to farm, and began huckstering in the mountains between Idaho Springs and Leadville.

Later, he thought he saw a way to get rich quick by supplying the Denver and Rio Grande Railroad with cross ties. He and a few other men took the contract for that work, but that year the snow began to fall in September, and continued till it made the work impossible. Lewis, in that business, lost all the money he had, and had to borrow money to get home.

People called him a fool when, to top his misfortune, he traded his land in Larimer County for an apparently worthless, run-down farm in Clear Creek Valley; but Lewis knew what he was doing. The farm had been "wheated" and "wheated" for years, and no thought had been given to the condition of the soil.

Lewis set to work to improve the soil. Rotten straw stacks, which were numerous on the place, made excellent fertilizer. He worked out the irrigation ditches, and



Jim Brown's
Price Wrecking
Fence & Gate
Catalog **FREE**

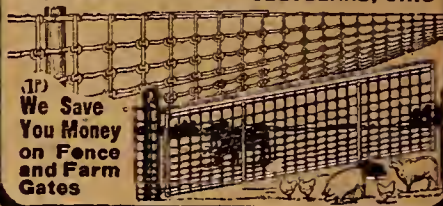
Whether you buy my fence or not, you ought to send today for my New 96-page Bargain Fence Book. A postal brings it postpaid. You will be surprised at my NEW, LOW, FACTORY, FREIGHT PAID prices. 150 styles. Hog, Cattle, Poultry, Lawn Fence, Gates, Barb Wire etc., to choose from.



I'll Save You One-third

or more. BROWN Fence is genuine, Basic, Open-hearth Wire, heavily Galvanized—rust resisting. Half million farmers have bought 125 million rods and saved thousands of dollars. Get my prices before you buy. I prove the quality by letting you put it to acid test. Sample and Book free, postpaid. Save big money.

THE BROWN FENCE & WIRE CO.
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60 VARIETIES Hardy Northern raised Chickens, Ducks, Geese, Turkeys. Pure-bred heaviest laying strains. Fowls, Eggs, Incubators, all at low prices. 24th year. Large Poultry Book and Breeders' Guide Free.

W. A. WEBER, Box 19, Mankato, Minn.

POULTRY AND PIGEONS FOR PROFIT
Foy's big book tells all about it. Contains many colored plates—an encyclopedia of poultry information, poultry houses, feeding for eggs, etc. Written by a man who knows. Sent for 5 cents. Low prices, fowls and eggs.

FRANK FOY Box 4 CLINTON, IOWA

GREIDER'S FINE CATALOG
of fine bred poultry for 1920; all choicest breeds illustrated and described; information on poultry, how to make hens lay, grow chicks—all facts. Low prices on breeding stock and hatching eggs. 28 years in business. This book only 10c.

B. H. Greider, Box 49, Rheoma, Pa.

64 BREEDS Most Profitable Chickens, ducks, geese and turkeys. Choice, pure-bred, hardy northern raised. Fowls, eggs, incubators at low prices. America's greatest poultry farm. 27 years in business. Valuable new 108 page Poultry Guide and Catalog free. Write today.

R. F. NEUBERT Co., Box 824, Mankato, Minn.

I'll Start You with leading varieties of Poultry. Grain Sprouters, Supplies, Eggs, Baby Chicks. Highest quality. Lowest possible cost. Send for illustrated book and price list. A regular information bureau free. Address: Nichol's Poultry Farm, Box 13, Monmouth, Ill.

THE LEGHORN WORLD
Devoted exclusively to all varieties of Leghorns. Published monthly at 25c per year. 12 big issues.

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LAND!
Rich land in Michigan. Good for grains, poultry, fruit, stock, etc. Big yields, 10, 20, 40, 80 to 160 A. \$15 to \$30 per A. Easy payments. Big booklet free. Swigart Land Co., Y1250 First Nat'l Bk. Bldg., Chicago, Ill.

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Get It From the Factory Direct
PRICES WAY DOWN
We've knocked the bottom out of high cost of fence building. We Pay the Freight and save you money. Here's a man that
Saved 38 per cent
Mr. R. D. Dillard, Milton, Okla., writes: "I found all the Fence as good or better than I expected. I saved \$28.65 on my \$76.00 order."
You will never know how much you can save thru our
DIRECT FROM FACTORY TO FARM
selling plan until you get our free catalog. Write today
KITSELMAN BROS., Dept. 271, Muncie, Ind.

Mankato Incubator EXPRESS PREPAID
The Old Reliable Hatcher now better than ever and sold at bed-rock price. Built of best material, all latest improvements, has redwood case, triple walls, hot water copper tank, double heating system, self regulator, large oil tank—one filling to batch, safety lamp, nursery, tested thermometer automatic ventilation, etc. Most simple, durable and successful machine. All set up ready for use. Direct from factory to you with strong blading guarantee. 26 years' experience building incubators and raising poultry. Largest factory in Northwest. Big incubator book and catalog free.

MANKATO INCUBATOR CO., Box 708, Mankato, Mass.



Own a "SELECTED" Farm In Western Canada —Make Bigger Profits!

The most wonderful opportunity in the world for Business Farmers is in the "SELECTED" Farms, which can be bought for \$15 to \$40 an acre along the lines of the Canadian National Railways in Western Canada.

"SELECTED" Farms
These "SELECTED" Farms are carefully chosen from the cream of the richest wheat and cattle country in America, to meet your special needs, by experts representing 14,000 miles of railway, whose advice, while free to settlers, is of great practical value.

A Cordial Welcome
Western Canada extends a helpful hand to homeseekers. Friendly neighbors—splendid schools, churches and social life—warm, sunny, growing summers and dry, cold, healthy winters—await you in this wonderfully prosperous "LAST WEST."

Big Profits in Wheat, Dairying, Beef and Dairy Cattle

"SELECTED" Farms average more than 20 bushels of wheat per acre. Under specially favorable conditions a yield of 50 to 60 bushels per acre is not uncommon. Dairying is exceptionally profitable. That soil and climate are well adapted to it is shown in greatly increased production and high quality maintained. A world-wide market awaits all that Western Canada can produce. Beef and dairy cattle yield great profits. Stock thrive on the prime grasses, which in many sections cure standing and make fine hay. Cattle and horses require only natural shelter most of the winter and bring high prices without grain feeding.

Low Taxes—Easy Terms
There is a small tax on the land, hut buildings, improvements, animals, machinery and personal property are all tax exempt. Terms on "Selected" Farms: About 10 per cent cash down, balance in equal payments over a term of years; interest usually 6 per cent.

Special Rates to Homeseekers
Special railway rates will be made for homeseekers and their effects to encourage personal inspection of the "SELECTED" Farms along the lines of the Canadian National Railways. Full information will be sent on request. WRITE OR MAIL COUPON TODAY!

DEWITT FOSTER, Superintendent Resources,
Canadian National Railways,
Dept. 1522, Marquette Bldg., Chicago.

Please send me free and without obligation to me, complete information on the items concerning Western Canada checked below:

☐ Opportunities for big profits in wheat
☐ Big money-making from stock raising
☐ Special Railway Rates for Homeseekers
☐ Business and Industrial Opportunities

Name.....
Address.....R. F. D.....
Town.....State.....

BEST FOR BABY CHICKS



3 Pans 50c POST PAID 6 Pans \$1
Fit any Mason Jar—Easy to clean—Sold by AMERICAN POULTRY JOURNAL, 52 Peterson Bldg., Chicago
World's Oldest—Largest—Best Poultry Paper—60 cents a year

DAY-OLD CHICKS

With stamp of quality Insuring Vigor and Livability. Shipments Guaranteed up to 1,500 miles. White Wyandottes, Barred Rocks, White Leghorns, Buff and White Orpingtons, S. C. and R. C. Reds.

EGGS FOR HATCHING
at low prepaid prices. A post card will bring you our 1920 catalog.
GOSHEN POULTRY FARMS, R-23, Goshen, Ind.

Baby Chicks

20 leading varieties, day old chicks. Safe delivery guaranteed. Postpaid. One of the largest and best equipped hatcheries in the United States. Catalog FREE.

Miller Poultry Farm, Box 502, Lancaster, Mo.

TEETH and TONIC for POULTRY

It will pay you to try PEARL GRIT

You never can lose by following the example of successful poultry raisers. Hundreds now depend on the "Double Purpose" poultry ration—PEARL GRIT. Keeps Poultry Healthy. Helps Hens Lay More Eggs.

An essential aid to perfect digestion of food. Contains all the valuable elements necessary in the making of white, hard shells and meaty eggs. Prevents clogging and fermentation. Ask your dealer or send 10c for pound package postpaid. Booklet of poultry remedies free.

THE OHIO MARBLE CO.
153 Cleveland St. Piqua, Ohio



Here are Mr. and Mrs. James A. Lewis of Clear Valley Valley, Colorado. Lewis failed many times before he succeeded, but he studied his failures and learned from them how to finally make good

put in alfalfa. "There is nothing like alfalfa to bring the soil up," Lewis remarked. After that he alternated alfalfa and truck with wheat, and in the thirty-eight years he has been on that place in Wheatridge he has had thirty-eight successive crops and not one failure.

Last year the tax assessor told Lewis that he ought to appraise his land higher than that around him, because some people said that Lewis had the richest land in the section. Lewis answered:

"It is the same land that there is all about here, and it was the poorest land about here before I took hold of it."

Lewis has worked hard, and has earned a substantial success. Besides owning his farm and having money invested in city property and in an irrigation project, he has given land to relatives, and land for the church and school in Wheatridge, and has donated a large home for returned missionaries.

"No man can succeed without anything to start on, unless he works hard and economizes," Lewis says. "It is not a matter of luck."

Three of the four children of Lewis are university graduates.

"I did not have an education myself," Lewis remarked, "but a college training is a good thing for a farmer. It all depends on the man, but most men with college education have learned to study, and will study the condition of the soil and market conditions, and so forth, and are not likely to fall into ruts, and will succeed where a man who has not learned to study will fail."

The least measure of the success of Lewis is in his worldly goods, for much of that he has given away; but one is impressed with the fact that he is a real, first-rate man and a "stem-winder."

"Anybody can succeed," asserted Lewis, "if he will work hard enough, apply himself, and use his head. I do not want you to put me up as any criterion. I don't consider that I have succeeded yet. I have done only what anybody could do."

C. VINA, Colorado

Tight Garage Dangerous

"THE loss of a friend by poisoning from exhaust fumes in a tight garage prompts me to write to the readers of FARM AND FIRESIDE so as to help them avoid such accidents," writes C. M. Baker of Wooster, Ohio.

"The best means to prevent this poisoning, which is known as petro mortis, is to provide adequate ventilation in the garage.

"When an engine is started in a tight garage, the partly combusted gas and volatile by-products which arise during the operation of the engine are responsible for the poisoning. The greater number of cases of petro mortis have occurred during cold weather, when engines are hard to operate, and they are raced for a few minutes before the garage is opened. So far as I can learn the most serious part of this type of poisoning is that death is caused in a short time, and without warning, while attacks of ordinary poisoning are manifested by headache, and possibly nausea.

"When an exit is made in the garage for the dangerous fumes, there is little danger from poisoning, but in a small air-tight garage the vapors soon contaminate the air and render it dangerous. One of the best rules in this case is to keep the doors of the garage wide open when the engine is going, and especially when it is first started in the morning."

"When the farmers adopt the forty-hour week," mused the city man who was born and raised on a farm, "I guess one of our problems will be to find a substitute for eats."

Healthy and Vigorous Fowls Mean Strong Livable Chicks



Mating Time

One of the most important seasons of the poultry year is at hand. At mating time your hens and roosters should be in the pink of condition to you'll get chicks that will live. Start in now to condition your breeding stock for the spring hatch.

Dr. Hess Poultry Pan-a-ce-a

increases the vitality of the parent stock, gives you fertile eggs, insures a hatch of good, strong, vigorous chicks.

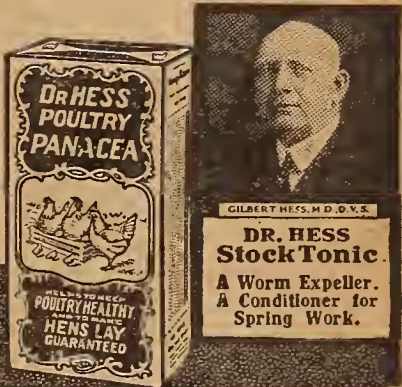
Speed up egg production during winter with Dr. Hess Poultry Pan-a-ce-a. It contains tonics that promote a hen's digestion, tonics that tone up the dormant egg organs—so that the proper amount of food goes to egg production—and not all to flesh and fat and laziness—when it's action and eggs you want.

Pan-a-ce-a supplies the additional iron for the blood—which is essential to the speeding-up process. It contains certain forms of lime that supply needed material for making egg shells.

Feed Pan-a-ce-a to all your poultry to make and keep them healthy. The dealer refunds your money if it does not do as claimed. Tell the dealer how many fowls you have and he will tell you what sized package to buy. Always buy Pan-a-ce-a according to the size of your flock. 30c, 75c and \$1.50 packages. 25-lb. pail, \$3.00; 100-lb. drum, \$10.00. Except in the far West and Canada.

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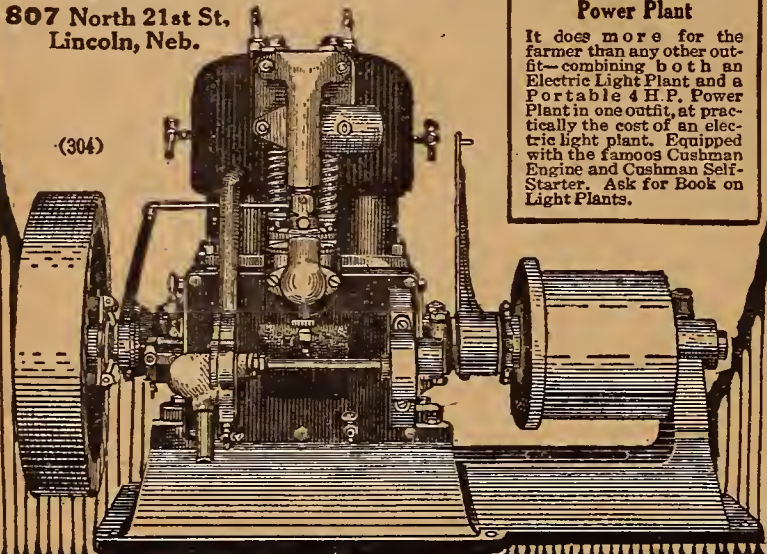
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The Tractor Salesman's Answers

[CONTINUED FROM PAGE 19]

off the engine when the tank is full; another engine in his workshop, where he has a feed grinder, a lathe, and a saw for cutting fire-wood.

In the basement of the house, which is electrically lighted from a nearby railroad, is an automatic pump which keeps the water pressure up to the number of pounds for which he sets the gauge. Within a year he expects to have a tractor.

All of these conveniences save on a year's average at least one man's labor. That is not so very much; but if you were to multiply all the cases where engine power is saving man power by the average number of men displaced, you would have a figure which probably would be startling. And even one man's labor for a year costs a sum which at present labor prices makes rather a neat addition to the farm income. Then if you were to figure the great number of horses that are being replaced by trucks and tractors and the grain and forage thus saved to be used by meat animals and by human beings, you have something to think about indeed.

Not that anyone who knows farming believes for a minute that horses are to be entirely replaced by tractors and trucks. They will never be, in the opinion of leading agriculturists. But there will be enough eliminated to count for something in the world's food supply. And last, but far from being least, is the back-breaking toil and drudgery which is saved the farmer.

The time that his mechanical devices save him can well be spent in planning his work, doing more skillful or more productive labor, or perhaps by playing a little more. Certainly no one has ever accused the farmer of playing too much, along with his other alleged sins of profiteering and combination which some sensational city papers like to feature.

Here is the thought that I would like every reader of this article to get: *There is some form of power that can be applied to*

your farm that will make you more money. Perhaps it's only a little engine pump, maybe it's a tractor, it might be a milking machine, and possibly you could use several power-driven machines to advantage. Somewhere there's a machine to fit one or more of your jobs that will do it cheaper than it can be done by hand—cheaper even sometimes than it could be done in the golden days when that old-fashioned farmhand could be had who worked "from sun to sun" for a dollar a day, and who always knew just what to do "without being told."

And when you consider the things that many people still consider luxuries, such as electric lights and conveniences for the long-suffering housewife, remember that those things too will pay you good dividends, and you will never regret having put them in.

There are just a few things to consider when getting ready to buy a farm-power outfit of any kind: Remember always that it is a business proposition, and that if you can't figure where you can make good interest on your investment, and a profit besides, you had better do without it. Be sure, first of all, that the outfit you buy is of the right size and type for your farm. See that it has the best of materials in it.

Then, before you make the deal, assure yourself that the company behind it is equipped to give you service, both as to instruction in caring for it and in the supplying of parts that may have to be replaced. Make them help you learn all about it, so that you can get all the value the manufacturer has put into it. Put quality and long-time service ahead of price always; be sure you have a machine that is adapted to your needs and then go ahead.

If you watch these things you can't very well go wrong, no matter whether it's a threshing machine or a power pump you are buying. And the more you explore the subject of farm power the more uses for you will discover on your farm.

How Indirect Selling Steals Your Profit

NORTH CAROLINA cotton mills paid \$11.50 a bale more for the cotton they used last year than the farmers who grew it received. Based on the total consumption of those mills, the cotton they used cost them \$15,000,000 more than the farmers received for it. Those millions of dollars went to the system that stands between the Southern cotton farmer and his market.

Department of Agricultural investigators give these figures as the result of a study recently made. They point out that direct selling by co-operative organizations would have reduced that \$11.50 a bale to a total marketing expense of \$2.50 to \$3 a bale in practically all cases. In their report of the investigation, which has been published in a free circular, "Suggested Improvements in Methods of Selling Cotton by Farmers," the federal specialists suggest remedies for the present evils of cotton-selling. They apply, to some extent, to the entire cotton-growing territory, but more particularly to sections like eastern North Carolina, where the cotton mills are close to the cottonfields.

In addition to more direct dealing, the Department urges other steps to be taken: Growing the kind of cotton the mills need, establishing ample storage and shed space and a compress at central points in producing areas, a disinterested classing service, better ginning facilities, the shipping of less damaged cotton, and, finally, the growing of better varieties of cotton.

Old Bony Scrub

GOOD-BY old Brindle, bony scrub. The time demands a better breed.

You eat enough, but there's the rub—You never pay for half your feed.

So after all these years we part,

But pray remember as you go.

If this should break your bovine heart,

You broke my purse long, long ago.

A COW TESTER.

High Fraternalism

"SCUSE me, boss, but would you mind 'S'vancin' me a dollar to jine de lodge dis evenin'?"

"I guess so, Uncle Jake. But seems to me you're always joining lodges. What's the name of the particular lodge?"

"Please, suh, it am de Suplime Defenders ob de Royal Purple Order ob de Constellations ob Epicures."

"Gee whiz—it only costs a dollar to join such a mighty lodge as that?"

"Suttinly, boss. Dat ain't nuin. You oughta see what I could jine fo' a dollar an' a half or two dollars."—Exchange.

The Forgotten Farm of Abraham Lincoln

[CONTINUED FROM PAGE 10]

Peter's nine children: 40 acres to Julius, 80 to Jurgen. Each son owns enough additional adjoining land to give him a farm of 240 acres.

The original home is on the eighty inherited by Jurgen Jepson. It may shortly pass into other hands, for Jepson is ambitious to give his five children a good schooling, and this is not to be had in the little one-room school near the Lincoln farm—its window panes broken, its door hanging askew, a general air of dejection and decrepitude marking the whole place.

"I hate to have the farm pass out of our hands," says Jurgen Jepson, "but I'd hate still more to bring children into the world and not give them the best education possible. I guess we'll move into town shortly."

As for Lincoln traditions or local pride in the Lincoln farm, you will wind around many a hill, along many a weary mile, before you find them.

"Dare bane no man named Lincoln lave hare," said the nearest neighbor, a quarter mile distant. "Dare bane Pederson, Olsen, Yensen, Yonson, Yepson; dare bane lot o' Yepsons, but no Lincoln, nein, no Lincoln hare."

The wayfarer turns wearily away, it is the same old answer, heard at every door.

"Yah, Peter Yepson, he lave t'ree miles sout', yah, only he bane dead now."

Things I Have Learned About Parcel-Post Marketing

By R. G. Kirby of Michigan

THE parcel post in its beginning was often hailed as a solution to the farmer's marketing problems. Although it did not solve all of the problems between the producer and the consumer, still it has been a great convenience to the farmer. This year the parcel-post method of marketing farm produce has been tried more extensively in some sections. We have used it, and find it a very satisfactory method of marketing.

Eggs can be shipped safely by parcel post in the commercial carriers. The packages can be returned for a few cents, and used for another consignment. Even hatching eggs carry very well through the mail if they are properly packed. This year we had the report of only two eggs broken out of a large number of shipments, and many good hatches were reported. They were shipped in non-breakable containers holding either 15, 30, or 50 eggs each. Each egg is first wrapped in paper, and fitted securely in its section so there will be no room for jostling. Parcel-post packages of hatching eggs cannot be sealed, as is the case with express shipments, but there seems to be little danger that the packages will ever be tampered with during the trip if the packages are tied with a stout cord.

Another form of egg package consists of a box of hollow cylinders made of corrugated paper. There is a paper plug for each cylinder. Each cylinder holds one egg securely in place, and there is no chance for jostling. We have never heard of an egg being broken in such a package when shipped by parcel post.

Fresh butter is another product that carries very well by parcel post. Special containers can be procured, and arrangements made with city customers to take a certain amount each week or every other week. We have seen strawberries shipped by parcel post, but they arrived in only fair condition. This may have been due to an over-ripe condition of the fruit. The boxes were also scantily filled, and of course the jostling of the trip caused them to settle, and this made an inferior-looking package. If the delivery man must haul the fruit a long distance over his route before returning to the post office, we would not advise the shipping of small fruit by parcel post, except possibly as an experiment to please some city relative or friend.

Poultry can be shipped by parcel post in the winter, and at least one consumer in Detroit found that he could purchase fine broilers from a country friend and have them shipped through the mail, and the cost was still several cents under the retail price at his local dealers'. The stock was fresh and far superior to cold-storage poultry.

ONE fault with shipping large amounts of produce by parcel post is the fact that the carriers who use a single buggy are not equipped to take the consignments.

One producer who tried the system said: "My mail carrier looks so sad and sorrowful when I come out with a load of packages that I pity him, and it takes about fifteen

minutes to locate the parcels under the seat and still leave enough room for the driver and the neighbor's mail."

This producer believed that the carrier was displeased at being inconvenienced with parcel-post produce packages, and she did not wish to bother him. In our own experience we have found our carrier very friendly and accommodating, and he has given the best satisfaction with all packages we have shipped. He has handled them carefully, protected them with robes when it rained, and frequently weighed and stamped them at the office and allowed us

to pay him the charges the next day. This has frequently been a great convenience when we were busy, as it takes some time to weigh up and stamp a number of packages. However, after a little experience and a study of the zone map, (the farmer is able to figure out his own postage rates, and this saves time for the carrier. Owning a pair of postal scales is a great convenience to the farmer and the mail man. They can be purchased for a moderate sum at most city stationery stores.

The best method of using the parcel post is first to ship to friends and relatives

who are appreciative of quality goods. Then the number of customers may be enlarged by adding the names of buyers who are highly recommended by people that are well known for their integrity.

A PARCEL-POST business in garden or poultry products may mean some correspondence, and this should be cut down to the minimum. The best method is to have an understanding that so many dozen eggs or pounds of butter are to be shipped at regular intervals. Then do not take on too many customers, and be forced to cut some of them out at the first shortage of eggs or butter. It is best to have only regular customers that can surely be supplied and then leave a surplus. There is always a market for that surplus, and it acts as a reserve to keep the private customers supplied with their needs. Of course, special crops will need some telephoning or correspondence, and this must be taken into consideration when trying to market by parcel post at a profit.

The great advantage of the parcel-post is in saving trips to town. A farmer with private customers and plenty of field work may find that twenty or thirty dozen eggs have accumulated in a few days. The weather may be hot, and he wishes to sell them while fresh. He is too tired to drive down at night, possibly before Saturday. The teams are busy during the day, and the wife does not wish to drive down while it is so hot. Why not pack those eggs in substantial parcel-post containers and send them to the regular customers? The cost of the stamps will be far less than the cost of the trip to town. Often, in the winter, the roads are bad, and butter and eggs or a carrier of fruit and vegetables can be shipped to a city consumer without loss. To the credit of the rural carriers it might be said that the roads are seldom bad enough to keep them at home.



Eggs can be safely shipped by parcel post

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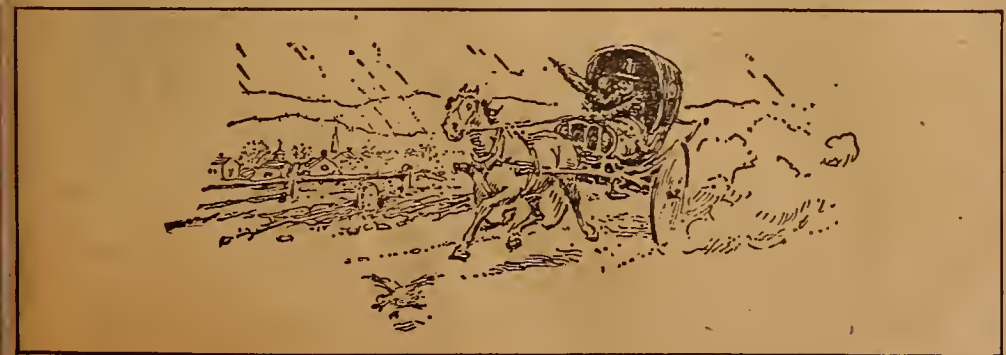
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Which do our soldiers like the better? What does the American girl look for in a husband—and what does the French girl look for? How do they size up on running a home? Which is the prettier? Which wears her clothes better? In this article you get not only the opinion of the soldier who writes it, but a symposium of the views expressed in trench, restaurant, boulevard, and transport. See how you stand, Miss America, in the eyes of two million young Americans.

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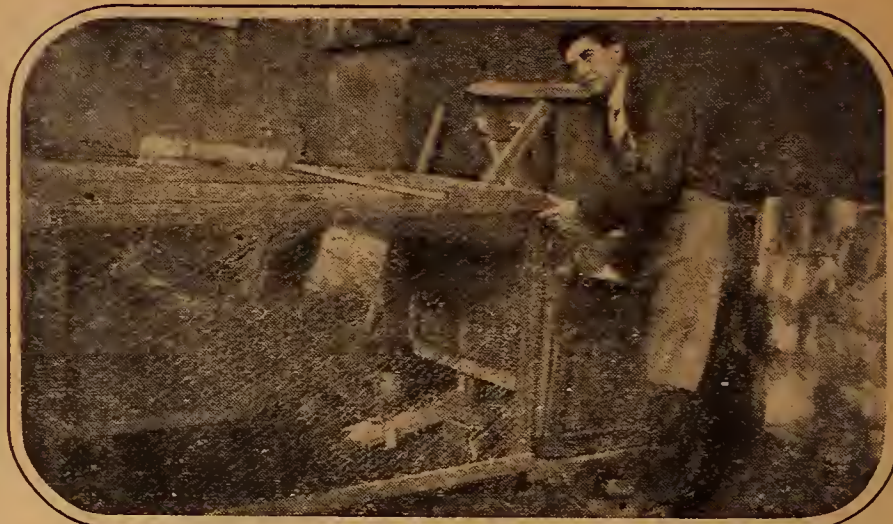
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A Poultryman Who Sees With His Hands



O. E. Jones of Missouri builds his own poultry equipment, in spite of the handicap of blindness

MISSOURI, which won the title of leading poultry State of the Union, through its production of \$76,000,000 worth of fowls and eggs last year, also boasts a successful poultry raiser who "sees with his hands." He is blind, but he refuses to consider his lack of sight a handicap.

The blind poultryman is O. E. Jones, secretary of the Jefferson City Association for the Blind. He has constructed in a back yard a two-story poultry house, 12x4x6 feet in dimension, equipped with a stairway, feed hoppers, removable frames covered with muslin and wire, roosts, dropping boards, and trap nests.

In the west half of the house four Single-Comb Black Minorcas live, work, and play. In the upper half of the east section are eight broilers, and in the lower half he keeps a hen and young chicks. Because there were soon more chicks than the

original house would quarter, the blind owner constructed, unaided, a brood coop equipped with a wire-covered run for the comfort of the mother hen.

Jones follows a unique system of recording the eggs produced. He uses a small piece of wire screening of one-fourth-inch mesh, which is tacked to a board. Vertically he uses one, two, three, and four tacks, each representing a particular hen. Horizontally, after each number he records each hen's production. At the end of the month all tacks are removed, results recorded, and the process is repeated.

Jones is striving to organize a poultry club at this institution, and looks forward some day to operating a poultry plant of several hundred hens. He became interested in poultry at an extension meeting for poultry raisers, conducted by specialists of the U. S. Department of Agriculture and the State College of Agriculture.

The Amount of Water Required for a Ram

I WISH to consult you regarding the operation of a small water ram.

What is the least amount of water required to run a ram (the necessary fall) and the quantity of water which can be delivered to a height of 20 feet at a distance of 50 feet from the ram?

Is it necessary to have a body of water back of the stream (delivered through a pipe) to produce pressure, or will the weight of water in the pipe leading to the ram operate it?

I can secure the flow of only a few barrels of water per day, and want to pump some of it into the house with a ram—rather than in some other way.

LEWIS H. KEMPER, Milwaukee, Wis.

REPLY: The minimum flow to operate a water ram is from two to three gallons per minute. To raise the water to a height of 20 feet would require a fall from source to ram of about three feet, and the resulting flow at delivery point would be between 10 and 15 gallons per hour. Use a No. 2 ram.

Should the flow cease, start the ram by manual operation of the shifting valve, or valve located at the waste.

It is not necessary to have a body of water back of the ram, as the flow in the drive pipe, which should be 25 to 30 feet long, will cause sufficient impact with a fall of three feet to deliver the water.

F. W. IVES.

What Do You Do With Your Straw?

IN PLANNING how much you intend to put into machinery for the coming year, it might be well to set aside some money for the purchase of a straw spreader. This is just a suggestion, but I believe it is a wise one.

It is almost impossible to turn all the straw on the farm into manure, especially in the Western wheat States. Consequently, the practice is to burn it, and you can stand on the porch of any farmhouse in the fall of the year and see countless burning straw piles.

Think how much better it would be if instead of burning this straw, and losing all the fertility, it could be spread over the land. When you cut and thresh the grain you have removed in the straw a great deal of the soil's strength. The least you can do is to put as much of it back as possible, to compensate, in some small measure, for what you have taken away.

There are two ways to spread straw—with pitchforks or with spreaders especially designed for the purpose. If your idea is to get it on the land any old way, hit or miss, in bunches and bare spots, use a fork. If you want a nice, even job, and one that will bring results, by all means use a spreader. I believe that the increased yield due to the application of the straw would pay for a spreader in one growing season. Certainly a few years' use will pay you back in full.

J. T. R.

Smith's System

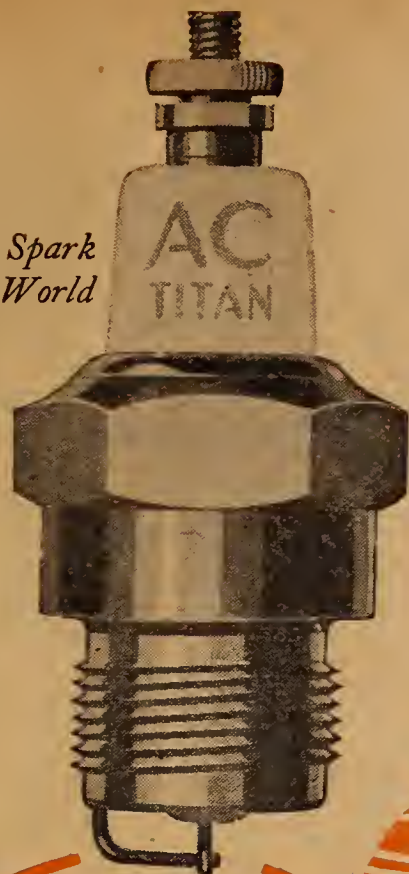
PRINCIPALLY because that wasn't his name, we'll call him Smith. Smith bought an automobile. He paid \$2,150 for it. He allowed no one to drive it but himself. He kept it in a new garage—a weather-proof structure with a cement floor. Every 500 miles he changed the oil in the crank case. For the first 1,000 miles he ran the car no faster than 25 miles an hour.

Then he bought a tractor for his farm. It cost \$2,900. He hired a tramp mechanic at \$3.50 a day to run it. When not in use, he left it in the old corral back of the barn. As long as nothing went wrong, no one thought of even changing the oil. The second day he took the heaviest plow on the farm down to an old alfalfa field, put the disks down as far as they would go, and said to the driver: "Now step on her. Let's see what she's good for."

Smith is rather a common name.

F. H. S.

*The Standard Spark
Plug of the World*



They Have Again Proved Their Supremacy

In every field of competition—on land, on water, and in the air—AC Spark Plugs, during 1919, made epochal contribution to titular achievement. In the light of the accomplishments, partially listed herewith, AC's have again solidly established their right to the title: Standard Spark Plug of the World. You, too, can rely on them.

Champion Ignition Company, FLINT, Michigan

U. S. Pat. No. 1,135,727, April 13, 1915, U. S. Pat. No. 1,216, 139, Feb. 13, 1917.
Other Patents Pending

Outstanding AC Achievements for Year of 1919

Road Racing

Cliff Durant wins 250-mile Santa Monica road race with Chevrolet Special. Average, 81.6 m. p. h. All cars to finish, AC-equipped.

Tommy Milton wins 301-mile Elgin road race with Duesenberg. Average, 73.5 m. p. h. Second, fourth, fifth and sixth places also won by AC-equipped cars.

Speedway Racing

Roscoe Sarles wins 150-mile race at Los Angeles with Roamer Special. Average, 70.84 m. p. h. All cars to finish, AC-equipped.

Tommy Milton wins 112.5-mile race at Uniontown with Duesenberg Special. Average, 96.24 m. p. h. Non-stop victory. Durant, Chevrolet Special, fourth. Both cars, AC-equipped.

Eddie Hearne finishes second in 500-mile Indianapolis race in first American car to cross wire. De Palma, Packard Special, sixth, breaking all records up to and including 250 miles. Eighth and ninth places also won by AC-equipped cars.

Tommy Milton wins 10-mile race at Sheepshead Bay, New York, and establishes world's record of 112.4 m. p. h. for the distance.

In 80-mile race at Tacoma, Hearne and Durant, driving AC-equipped cars, finish second and third respectively. Hearne and Durant also finish third and fourth in the 60-mile event.

Tommy Milton wins final heat of Uniontown Speedway meet, covering 22½ miles at average of 101.17 m. p. h. with his Duesenberg Special. Second and fourth places also won by AC-equipped cars.

Roscoe Sarles, in AC-equipped Philbrin Special, finishes second in 225-mile race at Uniontown.

Automobile Time Trials

Tommy Milton, driving an AC-equipped Duesenberg, establishes new world's record for cars of 231-300 cubic inches piston displacement for all distances from 30 to 300 miles. Covers 113 miles in 1 hour, 222 miles in 2 hours, and 323 miles in 3 hours.

Dave Lewis, driving an AC-equipped Duesenberg of 303½ cubic inches piston displacement, establishes new world's records for that class for all distances from 10 to 100 miles, and also new 1-hour record of 111 miles.

Jimmy Murphy, driving an AC-equipped Duesenberg of 183 cubic inches piston displacement, establishes new world's record for that class for all distances from 1 to 300 miles; also the following 1-, 2-, and 3-hour records—96 miles, 182 miles, 276 miles.

Dirt Track Racing

Eddie Hearne establishes a new world's dirt track record for 100 miles of 68 m. p. h. with his Chevrolet Special at Phoenix.

Power Boat Racing

Miss Detroit III wins Gold Cup, emblematic of the American speed boat championship, in Detroit river regatta, averaging 55 m. p. h. for thirty miles, the fastest time ever made on a short oval course of 2½ miles. Miss Detroit II finishes second, Liberty engines of both boats fired by AC Spark Plugs.

Aviation

Roland Rohlfs establishes new world's altitude record of 34,610 feet with Curtiss triplane equipped with AC Spark Plugs.

Caleb Bragg establishes new world's record of 18,210 feet for seaplanes.

Loening monoplane flies from Mitchell Field to Hog Island, a distance of 101 miles, in 33 minutes, an average of 180 m. p. h. and the fastest official time ever made by aeroplane.

Lieut. Alexander Pearson, Jr., makes the fastest flying time in transcontinental air race from New York to San Francisco and return.

SOW SALZER'S SEEDS

The responsibility of your seedsman is as important as the stability of your bank. No seed house in any part of the world has higher standards than Salzer.

America's Headquarters for Field Seeds

For 52 years we have kept faith with thousands of successful farmers. Every resource known to the science of seed improvement is used at our great trial and propagating grounds—Cliffwood and Fairview. Quality seeds—and quality seeds only—bear the seal of this house. Delivery of your order is guaranteed.

Send TODAY for a copy of our 1920 catalog—168 pages, profusely illustrated—98 pages showing 275 Salzer varieties in actual color. A postcard will bring it to you—FREE.

JOHN A. SALZER SEED CO.
Box 119, La Crosse, Wisconsin



Once Grown
Always Grown

It's FREE

All the secrets of garden success and of our 43 years of experience as expert seedsmen, gardeners and farmers are yours in this handsome seed and garden manual which contains 176 pages of valuable planting and gardening facts.

THE MAULE SEED BOOK

A lot of new, unusual features. Over 400,000 have most successful gardens every year by using Maule's Seeds and following our advice.

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4 Glorious ROSES

Hardy, Everblooming, Guaranteed True to Name. All bloom this summer. Mailed postpaid for 25c



Radiance—Rich pink
Miss Willmot—Sulphur cream
Florence Forrester—Large white
Hoosier Beauty—Velvety scarlet

10 Pkts. Flower Seeds

The following collection blooms from early summer to late fall: Aster, Sweet Alysium, Marigold, Petunia, Pansy, Phlox, Poppy, Salvia, Verbena and Zinnia. Generous pkts. Extra special value postpaid 10c. I will also mail 5 packets of Hardy Daisy seed (five colors) for 15c or I will mail the above 3 Collections, the 4 Roses, the 10 pkts. of Flower Seed and the 5 pkts. of Hardy Daisy Seed all for 40c.

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You can be sure when you buy Woodlawn grown fruit trees, vines, and berry bushes that they are thrifty, vigorous growers and heavy bearers. Our 44 years of successful growing experience has been directed towards producing a wide variety of that kind of stock. We have the exclusive sale of the new Ohio Beauty Apple.



New Ohio Beauty Apple

Our extensive line of ornamental shrubs, bushes, and perennials are of the same dependable quality as our trees.

We sell seeds for the vegetable and flower garden. Illustrated 1920 Nursery List contains valuable planting and growing information. Mailed on request.

WOODLAWN NURSERIES

884 Carson Ave. Rochester, N. Y.

How We Cash In on Good Seeds

I WONDER how many of us have failed in many of our farm operations the past year because we sowed seeds that were weak in germination, poor in quality, or full of dirt and half-matured grains.

We have just now footed up our income for the first nine months of the year 1919, and we have to our credit \$637 more than we have ever made before in any twelve months on our farm, and we have been hammering away here for twenty-eight years past.

We did this, and both of our boys in the army. We made a New Year's resolution, and that was to plant only the best seeds obtainable, or not plant at all. It cost us a few dollars more, maybe \$20, but it has paid, for we have had the best of everything for the family, and also for the swine, and chickens.

Planting poor seeds not only affects the crops, but is also felt in all other departments of the farm. A poor-yielding crop of small grain, wheat, oats, barley, or rye means that the table may suffer for bread, the hens suffer for scratch feed, the sheep get thin and short-wooled, the swine go shy because of lack of ground-feed slops. If we fail in a good crop of corn, the hogs go to market thin, the cream checks cut in half, the table suffers for lack of butter, and the horses go to the plow next spring thin and rickety.

How was it on your farm last year? Was it because you sowed a bunch of cheap garden seeds that your onions were all scallions, your peas never tender in the cooking, the garden lettuce and radishes were tough? It can be thus.

In our garden we are growing sweet corn of the sweetest variety, and we have grown this same variety for thirty-five years in the family, and know our roasting ears will be top-notch, and the surplus worth canning for winter.

We grew 600 bushels of wheat this year on a bit less than 16 acres. We sowed the best seed obtainable, pampered it by a 200-pound application of commercial fertilizer, then top-dressed every acre of it with strawy manure. After releaning we sold it for seed, netting nearly \$500 more than market price, and not a bushel of that wheat went over 30 miles from our home.

We grew 50 bushels per acre of a select white oats, releaned it all, and sold it for a good sum above market price, enough to pay us well for our extra work and the growing of better grain.

We planted corn that has been grown in the family for over forty years, improved and certainly acclimated to our country, and when our neighbors' corn was in roasting ears, from seed secured no one knows where, we were cutting and shocking well-ripened corn.

Thus it goes on down the list. Our garden yielded us over three times the quantity of table stuff because we planted the past season of reliable, tested seeds, instead of relying on puff collections and advertising lists of cheap stuff.

The boys have returned. We have taken them in partners with us here on the farm. We have them down at the state university now, and that is where they will help us most in the next few years, but it will be a good helping, we're thinking, and so long as they are reaping good seed there, they shall have our support, God bless them.

I wonder if you ever thought how much you lose by planting poor seeds, from the field down to the flower bed?

GEORGE W. BROWN, Ohio

A Home-Made Level

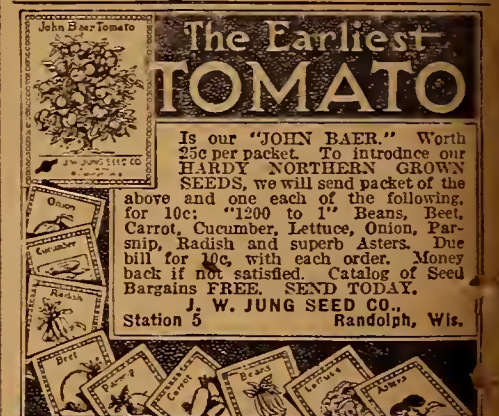


HERE is a sketch of a home-made field level which I find a strumment for water courses and fields on my irrigated farm. It is made of a metal tube, and is filled with water. The tips are of glass. Once set, it can be turned in any direction, and is always level. The cost was only 75 cents. JOHN S. EDWARDS, Utah

Burpee's Seeds Grow



BURPEE'S ANNUAL
THE LEADING AMERICAN SEED CATALOG
Burpee's Annual is a complete guide to the vegetable and flower garden. It fully describes the Burpee Quality Seeds with a hundred of the finest vegetables and flowers illustrated in the colors of nature. If you are interested in gardening, Burpee's Annual will be mailed to you free. Write for your copy today. W. ATLEE BURPEE CO., Seed Growers, Philadelphia

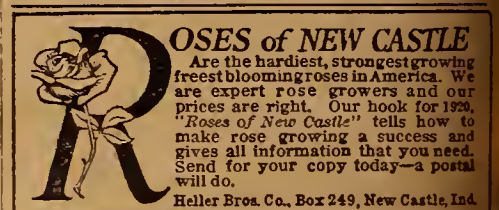


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1000. History and illustrated book gives all details about most vigorous, true nature, productive stock now grown. Book free.

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Make better gardens. All are tested for purity and vitality. Have been giving satisfaction for over 50 years. Be sure and try our

5 FINE VEGETABLES 10c
One large packet each of Bean, Beet, Lettuce, Radish and Tomato—postpaid.

All are heavy yielding and exceptionally fine in quality. Try them.

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Gives helpful cultural directions and offers strictly high-grade seeds at fair prices.

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are of Highest Quality. None better at any price. World Beating Prize Winners at all County and State Fairs.

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Radish—Earliest of All, worth 15c	Lettuce—Sensation worth 15c
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10 Spring Flowering Bulbs, worth 25c—Full size packages	

This Collection of World Beaters worth \$1.25. Guaranteed to please. Write to-day; mention this paper.

SEND 10c to help pay postage and packing and receive this valuable Bumper Crop Collection of Seeds, postpaid, together with our big, instructive, beautiful Seed and Plant Book. Tells all about Buckbee's Famous "Full of Life" Seeds, Plants, Bulbs, etc.

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FARM 426



BALDWIN OF BRIDGMAN.

Any one who knows will tell you that Michigan is a great Fruit Growing state. All varieties grown in any of our Northern States do remarkably well in Michigan. Climatic and soil conditions are ideal—Berry Plants grown in Michigan are best—better still when grown on New Ground—Baldwin grows them that way.

Nothing better than berries and small fruits to preserve health and maintain happiness during these reconstruction days. Our plants are true to name. All free from diseases. All northern grown on new rich land, producing strong, healthy, large, fully rooted plants. Millions of them, as good as ever were grown, offered our customers this year. We have had a wonderfully successful growing season.

Baldwin's Berry Plants

produced by Baldwin himself, are sure growers. Every grower or prospective customer, large or small, may have our big handsomely illustrated and thoroughly descriptive Berry Book. It contains valuable information, showing how to plant and produce successfully, delicious fruit from Baldwin's Berry Plants. It explains how to have the earliest berries in the Spring and the latest berries in the Fall. For the garden or market purposes, for pleasure or for profit, Baldwin will show you the way. Start right. Write tonight.


O. A. D. BALDWIN
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Available up-to-date hot water heating system; accurate temperature regulation; position and moisture control. Constructed of cypress, wood everlasting, and built for long use. Nothing fancy, but an honest, scientific, incubator, sold at a price you can easily pay. Raise your chicks in the Home Hatcher; safe, simple, inexpensive. Ideal for colony coop or poultry house use. Send plain-facts catalog of the Home Hatcher and Home Hatcher and order early. Write today.

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SPRAY YOUR FRUIT TREES AND VINES

Destroy the fungi and worms, and thus be sure of large yields of perfect fruit.

Excelsior Spraying Outfits and Prepared Mixtures

are used in large orchards and highly endorsed by successful growers. Write for our money-saving catalog, which also contains a full treatise on spraying Fruit and Vegetable crops.

W. M. STAIL SPRAYER CO.
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CLOVER

SAVE \$2 TO \$3 PER BUSHEL

High-grade seed such as we offer will be very scarce later. Prices higher. Get your seed while you can obtain it at our low prices. Every lot carries a test tag, giving pure origin. Buy direct from the Largest Mail Order Seed House in the world. Have new re-cleaned clover, \$5.40 per bu.; Unhulled Sweet clover, \$5.40 and Timothy, \$5.10. No seeds at reduced prices. No clover from an old established seed house. Your money back if you want it. Write before advance and compare our seed with the best. Send today for free samples and big 116-page catalog.

A. A. Berry Seed Co.
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Green's Trees

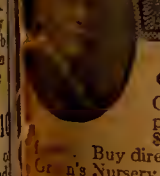
Pedigree Trees Grown from Bearing Trees Of highest quality at moderate prices. 42 years' experience. \$100,000 capital. Four nurserymen Buy direct from the old and reliable Green's Nursery Company and SAVE BIG MONEY

Agents employed. Apple trees, pear, cherry, plum, peach, quince, nut trees, grape vines, gooseberry and currant plants, raspberry, blackberry, strawberry, blueberries, shrubs, vines and roses for sale. Largest nursery selling

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GREEN'S NURSERY CO., 19 Wall Street
Rochester, N. Y.



"What My Wife Has Done to Help Me Succeed"

[CONTINUED FROM PAGE 8]

Third Prize

Winner: Robert Schwark
R. F. D. 1, Box 66,
Eldora, Iowa

WHEN I married, my family, most of my friends, and the neighborhood in general, united in prophecy that spelled my financial ruin, for my wife was a "city girl," who would want "to dress and go," so some gave me a year to make a wreck, while others limited it to five.

My wife was a city girl, and knew absolutely nothing about farming, but she came determined to learn, and she gave her work the same careful consideration that she had given her work in the office. Has she made good? Well, I'll say so, and the community at large will agree with me.

One of the first suggestions that she made was that we embark in a small way in the pure-bred cattle business. She argued that we could make just as much money by raising a few pure-bred calves, and not have half the work.

It was a safe bet. We embarked in a small way, but our herd has grown until it has assumed first place with us, and we "farm to feed the cattle" in place of marketing grain, and our farm is much more fertile than it was fifteen years ago.

My wife knows every cow on the place, and can trace its lineage offhand. If a prospective buyer comes when I am away, she dons her bonnet and goes afield with him. She not only calls his attention to the good points of our cattle, but makes him understand that this particular breed of cattle is far superior to any other breed.

On two or three occasions she has closed the deal, and once she got a higher price for an animal than I dreamed of asking.

In our business, hospitality must walk hand in hand with good cattle and good salesmanship to spell success, and I have never known her to fail in making visitors welcome. I have even known her hurriedly to unscrew the wash boiler on Monday morning and busy herself getting the kind of dinner that could not fail to make a hit with some cattleman who had come from a distance. Even though he did not buy, the chances are that he will come again—"Bread cast upon the waters," you know.

When cholera was raging one autumn, she suggested that we vaccinate our hogs and turn them into the corn.

"Then," she said, "if the ungrateful things want to die after they have eaten all the corn, I'll have the satisfaction of knowing that I didn't have to cook for a corn husker to pick it for them."

But they did not die, and the next year the field where they had been was fertility itself.

Best of all, she made me subscribe for, and read, three good magazines besides the daily paper. In this way I have been able to keep abreast of the times, and while I may not be as well informed as a city dweller, I am interested in something besides corn and hogs and the price of fat cattle in Chicago.

Financially—well, the income-tax man got me for over \$700 last year, and my wife was to blame for more than half of it!

NOTE: The other prize contest letters will appear in one of our future issues.

Getting Maximum Yields With Fertilizer

IRA PRICE of St. Johns, Ohio, has in eight years increased his alfalfa yield from just a fair stand to a crop that yields over four tons per acre. The first year, only a poor stand was obtained. The addition of 300 pounds of 16 per cent acid phosphate gave him a fair crop, and the annual application of a like amount of phosphorus has increased his yield so that he now obtains 25 tons a year from his three cuttings of the six acres.

Similar results were obtained by E. E. Cheney of Urbana, Ohio, by the use of raw rock phosphate on his cornfield. Several hundred pounds of the raw rock were used on his corn, while a neighbor, whose field was adjoining, did not use any fertilizer, and laughed because Cheney did. September, however, found Cheney's corn much earlier, and it produced a much better yield. The laugh was then the other way.

W. A. S.

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Spraying Secrets Now Sent FREE!

SEND THE COUPON! Learn now, the secret of recognizing and killing the pests that sweep away your profits. Learn how spraying will control the San Jose Scale, Codling Moth, and other pests that ruin Apple Crops. How spraying will protect your Potatoes—also your Peaches, Plums, Pears and other fruits. How spraying will keep Pigs growing and Hens laying. Our new FREE Book and Spraying Guide give you these facts. They are worth hundreds of dollars to any farmer or fruit grower. Send coupon and get them today.

HAYES SPRAYERS For All Purposes

Whether for spraying Orchards or Gardens; for disinfecting Hogs or Poultry; for whitewashing or cold water painting, or for any of a hundred other purposes, there's a Hayes Sprayer to exactly meet your needs. Hayes Sprayers are designed for ease of operation, high pressure and enduring service. They give quickest results with least effort. Their use adds fortunes to Farmers' and Fruit Growers' profits each year.

Just Send the Coupon

Tell us what you want your sprayer to do, and we'll tell you the style best suited to your needs, and its price. We'll also send the New Book and Spraying Guide FREE.

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(41)

Hayes Pump & Planter Company
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Please send, FREE and without obligation, your Big Sprayer Book and Valuable Spraying Guide.

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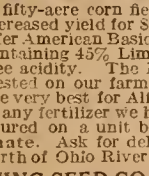
P. O.....

State..... R. F. D.....

Does It Pay To Fertilize Corn?

A fifty-acre corn field on one of our farms gave us \$24 increased yield for \$4 invested in fertilizer this year. We offer American Basic Phosphate, a carrier of Phosphorus, containing 45% Lime filler instead of worthless filler of free acidity. The Phosphorus immediately available. Tested on our farms for twenty years and found to be the very best for Alfalfa, Lucerne, small grains or Corn of any fertilizer we have ever used. The best of all when figured on a unit basis. Cheaper Than Acid Phosphate. Ask for delivered prices on car lots in territory north of Ohio River only.

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Fruits, Shrubs, Etc.

Bargains you can't duplicate anywhere. Quality stock that can't be beat. Every variety to improve your home grounds or to plant that home orchard. I sell direct to consumer from my 400-acre nursery, at prices that save you 50 per cent. To illustrate—3 assorted rose bushes \$1. Apple trees, 16 assorted varieties, including famous Delicious, all 3 years old, for \$5.

100 Strawberry Plants

The famous Dr. Burrill \$1,000,000 variety. 100 plants for \$1.50.

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Two million evergreens now ready for farmers who want windbreaks to improve their farms. Save fuel and shelter cattle. My prices put evergreens within your reach. My trees are hardy, root-pruned and transplanted. My guarantee makes you safe.

Write Today For Prices

Get my catalog. See how I grow evergreens, how I get strong roots, bushy tops, why Ferris evergreens grow where others die, how a windbreak for a few dollars will increase value of your farm \$1,000 to \$2,000. Address

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GOOD AS CAN BE GROWN

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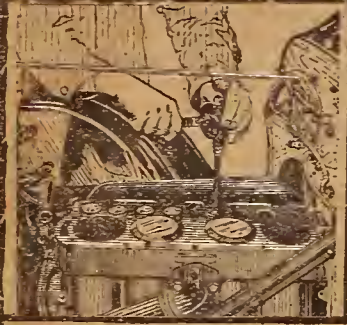
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Rotations That Will Help Maintain the Fertility of Your Soil

[CONTINUED FROM PAGE 13]

A small grain crop alternated with corn or kafir will maintain the productiveness of the soil much better than corn or kafir grown continuously; but where crops like alfalfa, sweet clover, red clover, peanuts, and cowpeas are introduced into the rotation, the fertility of the soil is much more improved. At the Kansas Experiment Station, at Manhattan, where corn has been grown continuously for eighty years, the yield of corn in 1917 was 17½ bushels an acre. In a simple rotation of two crops of corn and one of wheat the yield of corn was 22½ bushels, an increase of five bushels an acre.

In the same rotation where cowpeas were sown after harvesting the wheat, and plowed under in the fall before frost, the yield was increased to 34½ bushels per acre. On a field that grew alfalfa four years, corn two years, wheat one year, and then corn again, the yield was 45 bushels, an increase over the ground on which corn had been grown continuously of 27½ bushels an acre. This great increase in yield was due in a great measure to the beneficial effects of alfalfa.

The acreage of alfalfa should be greatly increased in every section of the Great Plains where it can be successfully grown. In Kansas there is less than 3.5 per cent of the improved land of the state in alfalfa, and only one county in the State has as much as 10 per cent of the improved land in this crop. This is the best alfalfa-growing region in the United States, and should not have less than 20 per cent of its cultivated land in alfalfa.

There is no crop that can be harvested with less labor if hogs are used for the purpose, there is no crop that will remain longer on the field after reaching maturity without injury to succeeding crops, and there is no crop that will do more to maintain the productiveness of the soils of the Great Plains than alfalfa. The mistake is often made of seeding to this crop only the most productive soils. Alfalfa should be sown on the thinnest soils of the farm. With proper treatment these soils will grow alfalfa successfully, and alfalfa will produce more upon such soils than any other crop that can be grown.

When the farmers of the eastern Great Plains reduce the acreage of wheat and corn so that 25 per cent more of their cultivated land can be seeded to alfalfa, and when this crop is properly rotated with the other crops of the farms, they will have taken the first great step necessary for the maintenance of the fertility of the soils of this region.

An Old Montana Rancher Tells His Big Rule for Success

[CONTINUED FROM PAGE 6]

time. Practically every man paid up eventually, so that I cleared some money for my work.

History repeats itself. To-day foreign countries are almost stripped of horses suitable for farm work. All European countries want horses.

The United States is the only nation with any surplus of big horses. I know Russia does not have them, for I lived there for twenty-one years, and I know Russia as only a native of that country can.

Some men fear the influence of the tractor on the horse market. As a practical farmer, with long years of experience in the West, I know they will not displace the horse. Don't fret about them. While my chief interests have been in cattle, I have sold \$27,000 worth of horses off the range since 1911, have twice as many horses left as I ever had, and my horses have made me more clear profit, proportionately to numbers, than my cattle.

My advice to my friends is to get rid of their inferior horses, and to put in all the good ones they can handle now. Don't sacrifice a single good drafter, and go in debt, if necessary, to put your teams on a first-class basis, now while horses are relatively cheap.

The time to buy is when the average man is discouraged and wants to sell. You can never go wrong on that plan.

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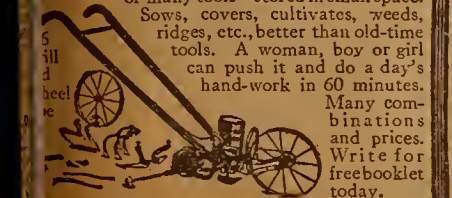
and other small fruits these days. Strawberries sold as high as 50c a qt., \$16 a bushel at wholesale. Are you receiving these high prices as a grower or paying them as a consumer? It makes a vast difference to your pocketbook. You can grow nothing gives handsomer returns. I know of farmers who had \$1300 from 1/2 acre last year. If you live in a part of your lawn or back yard will make a fine berry bed. Our Everbearing plants set in April will bear in August and continue until November give two crops the following season. Get our "Farmer on the Strawberry" price 50c postpaid you will have all the experts know. All Strawberries, Raspberries, Blackberries, Gooseberries, Currants, Fruit Trees, Roses, Shrubs, etc. Fully illustrated Catalogue free.

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ateman Mfg Co., Box 38C, Grenloch, N. J.

Cupid Astride a Mule

[CONTINUED FROM PAGE 52]

There was Sunset Lodge just ahead, very silent. Surely there could be no life in the place! Through the straight trunks of the pines she could see the golden bottoms over which she had looked that day. Not a sound, not a sound. Where could Philip be? Was he ill?

Tremblingly she dismounted and stood by the horse's head. The horse was winded. She patted him gently, then left him, his head drooped, his ears erect, his intelligent eyes following her. She looked like some wild elf of the woods spying for the first time on man's habitation.

She stopped. With shaking fingers she quickly arranged her hair. She took a step or two forward. Then led by the same fate that had gripped her a thousand miles away she went softly up on the porch. The door was closed. The sunlight threw her shadow on the wall. She started at sight of her shadow. She had seemed a being unsubstantial, a spirit drawn by some resistless force. But that shadow was a substantial thing—the shadow of Agnes Waring.

She grew faint. She moved closer to the wall for support. Her shadow must have crossed the window. The door was flung open. Philip stood in the doorway. His eyes looked strange, uncomprehending, as if he saw a ghost.

"Is it you, Agnes?" he asked.

"Yes, Philip," she faltered—and smiled.

The smile broke the spell that had chained them both. He came to her, his face glorious. The fear left her eyes. Into them came a light richer than the sunset, more wonderful than the lights of a thousand sunsets. Philip Girard took her in his arms.

THE sun hung red just above the misty line of the swamp. Still they sat on the step side by side, like the first beings ever created, and looked toward the sunset just as those first beings had looked when the sun was new. Into this ethereal atmosphere burst Davy Allen, ragged, dusty, uncomprehending, a call back to Mother Earth!

Perhaps it was the sunset behind him that made it seem to the woman that a halo played about the tattered hat of Davy. Certainly she jumped up, ran to him with swimming eyes, and kissed him. Certainly Girard clapped him on the back, then hugged him. Certainly Davy blushed as red as Davy could blush, and did not know what to do or what to say.

Not knowing, he turned away.

"Thar's old Jess!" he cried. "Set just whar he set befo', ding my skin! No tellin' how long he's been set thar. Ever muscle in the old boy's cramped!"

"Bird season's over," said Girard. "Get 'em up, Jess! Davy, I'm not going to New York to-night; I'm going to Camden instead."

"To see a doctor?"

"No—a preacher."

"Well, thar's a good un thar, Rev. McCauley—knows the Bible by heart, folks say."

"And Agnes here—Davy, get this, boy!—she's coming back with me to-morrow and here we stay till I get strong."

more thing, old scout!" Girard pulled a telegram out of his pocket. "It was sent out from the station. I've sold my book."

Davy looked only at Agnes. Her face was as crimson as the sunset. Davy would have spoken, but words at best are weak things, and his vocabulary was very limited.

So being bashful, feeling that he had intruded, he walked round the lodge, leaving grown folks to their devices. Behind the lodge he met Will, the cook, coming to say good-by to the "kindest man he had ever knowned." There was a patch of sand behind the lodge. Into the middle of it Davy leaped.

"Pat, nigger, pat!" he ordered.

Will looked amazed, then bent double and patted—tattoo after tattoo, faster and faster.

Like a scarecrow come amazingly to life, Davy danced faster and faster, flinging the sand right and left, executing steps that called for the admiration of even such a dancer as Will.

"Great, Davy! Great!"

The patting stopped. Davy wheeled round. They stood together, her hand in his, her head very near his shoulder, the sunset behind them. From the wide marsh rose a medley of gentle pippings and callings. The marsh birds, from their day's wanderings, had come home.

[THE END]



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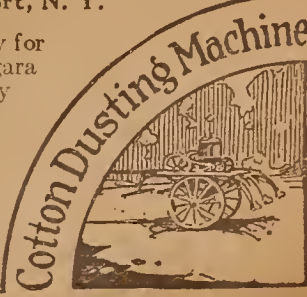
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Our Letters to Each Other

This is where we take a few lines every month to talk things over, so if you've got anything on your mind, let's hear from you

OF COURSE, the Post Office Department under Albert Sidney Burleson isn't all it might be, but there are some good things about it, and, principally because we haven't seen anything but knocks printed about it for a long time, we think it might be interesting to print a favorable point or two:

First, the parcel-post service seems to measure up fairly decently, from the farmer's standpoint at least. One farmer recently wrote to the department:

"I ship about 20,000 eggs a month by parcel post, and I have never had a complaint about the delivery service, nor a broken egg so far."

Then, too, with regard to the postal service generally, we fail to consider what a marvelous fast service it is compared to the system our forefathers had early in the nineteenth century. Early in the century the mail routes included only a few cities in Maine, Georgia, New Hampshire, New York, Pennsylvania, Maryland, Kentucky, and Virginia, making tri-weekly deliveries in summer and bi-weekly in winter, all by stage. There was no postmaster general in the cabinet until 1829. Letters were charged 25 cents postage for anything over 450 miles; half a century later, 10 cents, prepaid, carried a letter 3,000 miles, and under that distance five and three cents. The popular pen was the good gray-goose quill.

Seventy—and Still at Work

There is something about the folks who read FARM AND FIRESIDE that seems to keep them from ever getting old. We are forever receiving letters from folks who are sixty, seventy, eighty, or ninety years young saying that they are just as spry and able as ever.

Of course, we don't want to tout FARM AND FIRESIDE as the Fountain of Youth, nor anything like that, and probably the magazine has nothing to do with it, but it certainly is encouraging to know there are so many long-termers among us. Here, for instance, is our good friend D. B. Chase of Seneca, Illinois, who sends us his picture and says:

"I am an old customer of yours, seventy years young. I have worked all summer" (although he doesn't have to work if he doesn't want to), "earning \$300, and am taking no back seat for anybody. Also, can sing that song 'Oh, Dear, What Can the Matter Be?'"

Well, Mr. Chase, we congratulate you. If some of the strikers would only follow your example we'd all get along better.

Those Packers Again!

We got a letter from a pretty level-headed farmer out in Iowa, the other day, about the packers. If he farms as straight as he thinks (and we'll bet he does), he's all right. Read his letter and see if you don't agree with us:

"DEAR EDITOR: I have been taking FARM AND FIRESIDE for about fifteen years, and although I have followed it pretty closely I don't suppose I have written that many letters to you in as many years. However, since your editorial policy seems to be one to encourage letters from readers, I want to add a few thoughts that have been puzzling me for some time.

"One of the greatest movements at the present time is the investigation of the packers. Now, I have been farming and raising live stock for market for twenty-five years. I have been through the ups and downs of the farming game, and I remember pretty well some of the latter. I am heartily in favor of anything that will stabilize the live-stock market, and that will close the spread between the farmer

and the ultimate consumer. I am not the man to say that the "Big Five" packers have absolutely clean hands in their dealings with producers. They are big and powerful, and that always carries with it a lot of opportunities and temptations.

"However, I do not believe that it is fair to attack the packers as the Federal Trade Commission has. The prejudiced and cut-and-dried methods which they use to prove the packers in the wrong are inclined to make one believe that they are not entirely without axes to grind.

"Every thinking farmer knows that he would be a whole lot worse off without the packers and their thoroughly efficient machine for handling and distributing meat products. He knows, too, that all fluctuations

in prices are not due to juggling by buyers. The packer gets burnt once in a while too. The packer has his shortcomings, no doubt, but we'd be in a pretty bad fix without him altogether.

"So I say, if we are going to investigate the packing industry, let's do it in a fair and unprejudiced way. If he's guilty prove it, and punish him. If regulation will prevent his getting into further mischief, and if it can be put into effect without clogging up the machinery of live-stock marketing and meat distribution, I, for one, am in favor of it.

"But let's be fair and open-minded. If we're not, we will do the cause a whole lot more harm than good, for we

will lose the confidence of the public. Fair methods of investigation are what we farmers want, and not sensational disclosures which make mountains out of molehills.

"Yours for a better agriculture, B. W., Iowa."

The thing to do with the packers, it seems to us, is, as B. W. says, to separate the good things they have done from the bad things, keep that which is good and destroy that which is bad. There can be no question that the packers have built up a wonderful machine for manufacturing and distributing meat products, the best and finest of its kind in the world. It would be cutting off our noses to spite our faces if, in operating on the packers to cut out their bad spots, we were to plunge the knife on into the sound and wonderful heart of the packing industry, and cut that out too. Let us keep the machine they have built, and improve

FARM AND FIRESIDE

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You are invited to ask questions of any or all of these men in their respective fields. State your problem clearly and fully, enclosing a stamped self-addressed envelope for reply. Address each editor care of Farm and Fireside, 381 Fourth Avenue, New York.

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meat on the hoof and charging too much for meat in the finished package, why not establish a local packing plant owned by you and your neighbors, putting into operation in it, on a small scale, all the tricks the trade you can, that the big packers have learned for you?

Our personal opinion is that it will have a sobering effect on the packers. No amount of legislation could ever be about. If they are robbing the country, local competition would make them quit. If they are not robbing anyone, and we have a too expensive system, it would make them change it.

Naturally you are wondering whether local competition can survive the present cutting onslaught it would probably suffer at the hands of the national packers. Their desire to maintain their supreme command in the packing business. The best answer we can make to that is that it is being done. Elsewhere in this issue, under the name of C. T. Conklin, you find the story of at least one such successful local undertaking. There are others. There might be one in your community, you organized it right.

And this, we believe, is the correct answer to the packer problem. It is human nature against human nature, and when that is done cleanly the right usually emerges triumphant.

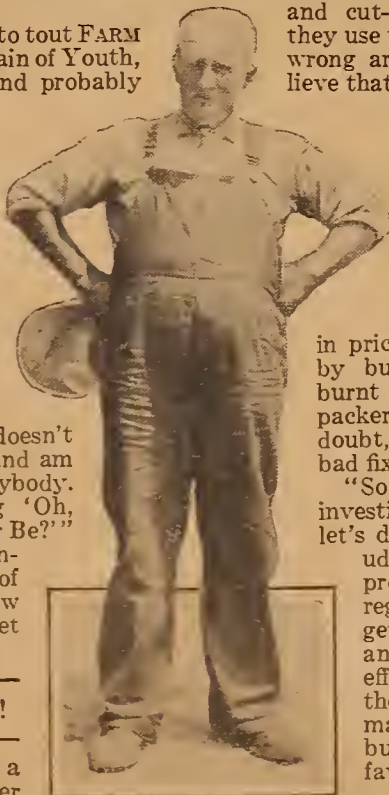
We Like This Boy

The makings of successful men naturally stick out all over some boys. We found one of these out in Oklahoma the other day in the person of Otho Parker Medford, who won first prize in the boys and girls' contest, "Chances My Parents Have Given Me to Make Money on the Farm." When he received our letter, the check he wrote back:

"I was very much surprised to see that I had won first. I received your letter Friday noon, and Friday evening I went out where my brother lived, and who showed him the check he could hardly believe I had won the prize.

"The next day I cashed the check. Saturday I bought a fine spotted pig, and weighed better than 50 pounds. I paid prize money I received from you for the pig. I wish to thank you."

There can't be much wrong with a boy who turns his prize money right back into the business that won it for him, now can there? We congratulate you, Otho, and we'll say further that if all the boys and girls in the country were like you—



D. B. Chase of Seneca, Illinois



Here are the Swansons. Mr. Chase is not a selfish man, and doesn't believe in taking all the picture space for himself. When he sent us his own picture he also sent one of a group of five of his friends and neighbors—all Swansons. The three Swansons aboard the buck are Myron, Elsie, and Myrtle, and daughters, respectfully, of Chris Swanson, a good farmer near Seneca. The buck, Mr. Chase informs us, came from some of his own best stock.

it, for it is good, and needs only to be purged of the misuse and abuse of it by the men who built it.

I do not think the remedy lies in legislation or regulation. You cannot legislate human nature. You cannot regulate a state of mind. There never has been, and probably never will be, a law on the statute books which cannot be got over, or under, or around or through, by men who wish to evade it. And if the packers' sins are traceable to anything, it is to human nature and a state of mind—that is, the natural desire for money and power, supplemented by opportunity offering a strong temptation to get them.

The only law man cannot successfully violate is the law of nature: *If you take more than your share, somebody else will have to pay for it.*

If the packers have taken more than their share, we resent it as a violation of natural law.

The remedy, it seems to us, is to put another natural law at work to bring them to book—the law of supply and demand.

The packers were gradually able to gain

control of your local market because they organized their plants so efficiently, and found so many uses for the by-products which your old-time local butcher threw or gave away, that they could buy meat on the hoof, slaughter, pack, and redistribute it nationally cheaper than your home-town butcher could do it locally.

So far, that was well and good. It was a more efficient way to do business. But it placed almost limitless power in the hands of a few men—the power to control the price of what you and I sell and eat. Whether they have exercised this power is beside the point. The wrong thing is that they possess it. They can run cattle prices down and finished product prices up if they choose; and that is a power no man or group of men should wield over the necessities of life of 110 million people.

Then what shall we do to be saved?

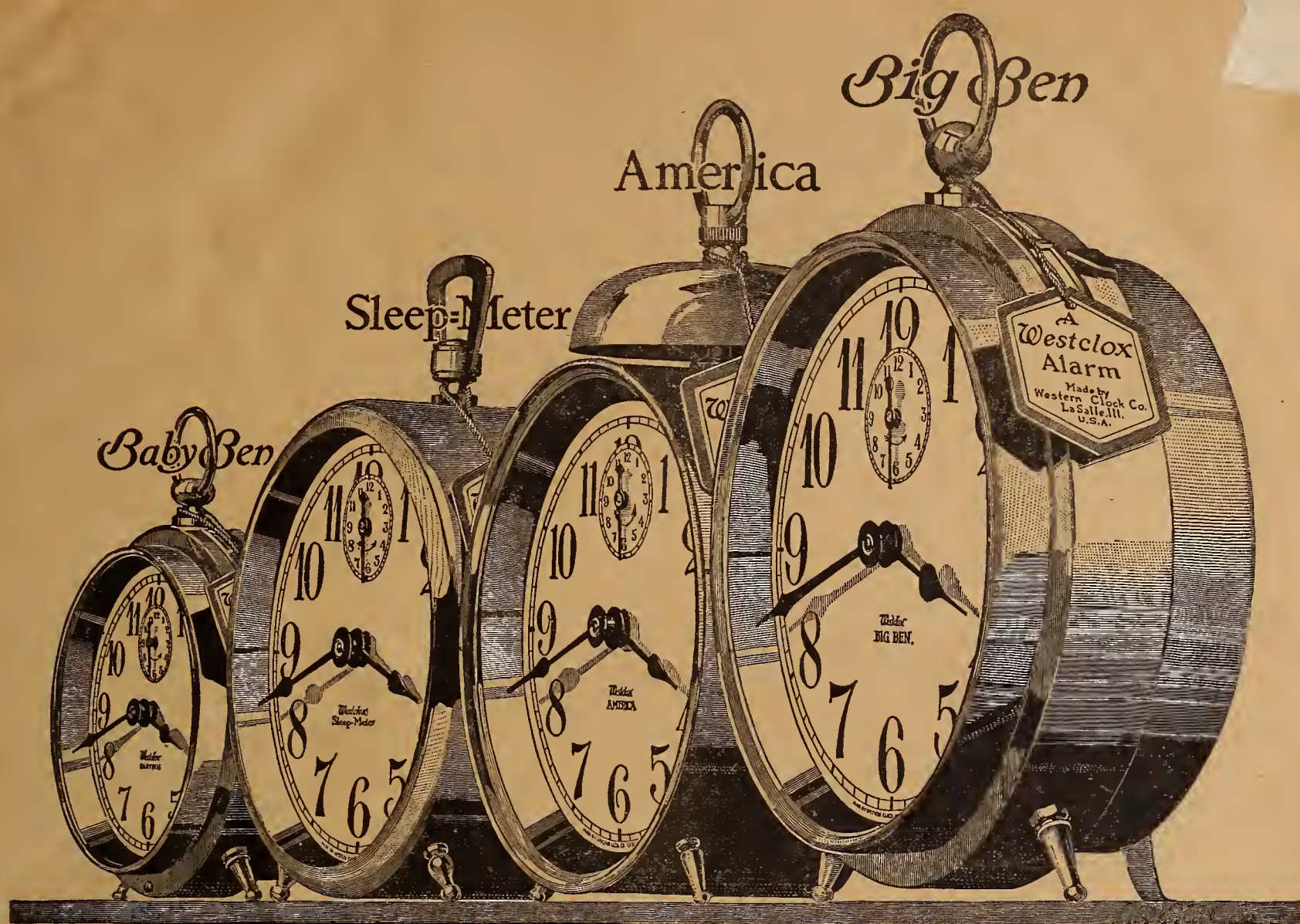
The answer, it seems to us, is in your hands, locally. If, by manipulation, or by virtue of the expensiveness of the system they have built up, or if for any other reason the packers are paying too little for

great many of them are—we would certainly have nothing to fear for the future which you are growing up to manage in years when our present grown-up citizenship usefulness begins to wane.

At the end of the year we should like to hear how you came out on your pig-venture, Otho.

This is all until next time.

George Martin



Westclox—for these dark mornings

IT takes real courage to get up when the room is dark; when the floor's like ice; when you dread that dash to the open window—when the bed clothes hug you warm as toast!

Your Westclox understands: it lets you sleep right up to the last tick.

That's a good alarm clock's

most important job—calling you on the dot. Then, of course, it must keep good time all day.

All Westclox are good clocks; each one has that same good construction principle that put Big Ben where he is today. You *know* you can depend on a Westclox alarm. Each one has the name Westclox on dial and tag.

Western Clock Co—makers of Westclox

La Salle & Peru, Ill., U. S. A.

WHEN you stop to ask yourself if the Hupmobile literally *is* the best car of its class in the world, you must not overlook the *really wonderful* character of the service it gives.

By service, we mean more than long life and Hupmobile economy—which are proverbial.

We mean the faithfulness and the dependability of *The Comfort Car*—a willingness of response and steadiness of performance which warm a driver's heart.

It is the positively *unusual* things which the Hupmobile does—not now and then, but habitually—which make people believe it is the best car of its class in the world.

La Crosse TRACTOR

Complete For \$895!

12 Drawbar
Horsepower
895

A year ago you would not have believed you could ever buy the standard La Crosse Model G Tractor for so low a price as \$895! But the production of the La Crosse Tractor has now become so standardized that we are able to offer a reduction of \$355 from the former price of \$1250. This new price of \$895 is for the tractor complete. There are no extras to buy.

The production of the La Crosse Model G Tractor will be more than doubled in 1920. The Model G you secure at \$895 will be exactly the same as the Model G sold for \$1250 last year. It has not changed in any way. You will simply be getting a tractor of \$1250 quality

and performance for \$895. This is your chance to save \$355.

Economical on Fuel and Oil

The La Crosse is the perfect kerosene burning tractor. Every part of the wonderful twin cylinder La Crosse kerosene burning motor is constantly supplied with pure **fresh** oil by means of the Force Feed Oiler which operates under 300 pounds pressure. This is the most economical and complete oiling on any tractor. The La Crosse Model G holds many records for low fuel cost and dependability. It is the simple, one man tractor you can use on every part of your farm.

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There are thousands of La Crosse Model G Tractors in successful use. This is your chance to get one at a saving of \$355. See your dealer immediately. If you are not acquainted with him, write or wire us for his name.

La Crosse Tractor Company

Department 042

La Crosse, Wisconsin, U. S. A.



*A La Crosse Tractor Means
a Happy Farmer*



KELLOGG'S EVERBEARING STRAWBERRY GARDEN

EVERBEARING STRAWBERRY GARDEN set this spring will give you loads of big, delicious, ripe strawberries from early in August right up until heavy freezing weather. Next year it will yield almost a continuous crop from June until the ground is covered with snow. In fact, this garden produces more berries from spring until winter than you can use during the entire year. It will provide your family with strawberries of the very highest quality fresh from throughout the summer and fall; a generous supply of canned berries, jam, preserves and jelly for winter; and in addition, all be gallons of big, fancy berries left to sell. Your friends will jump at the chance to buy these surplus berries at a low price. Just think of it!—In addition to producing all the strawberries you can possibly use at home, this garden

Will Soon Pay For Itself and Give You a Big Cash Profit Besides

A cash profit was made by J. W. Summey of Washington family had used three quarts of berries every day and canned the surplus for winter.

A cash profit after fully supplying his own family is the record of J. W. Foote of Iowa.

These are not exceptional cases but a very fair average of thousands of reports received from enthusiastic owners in every section of the country.)

60 cents per quart for my surplus berries, and fresh strawberries practically without a break from early June to November.

C. H. Morgan, New York.

\$6.50 for each 24-pint crate—(only nine berries to the pint)—for all my surplus berries.

J. Cook, British Columbia.

Kellogg's Everbearing Strawberry Garden occupies a very small space—only 25 x 30 feet, (or any dimensions making an equal area) and it will contribute more to your home in dollars, comfort and good cheer than anything else you could possibly produce in the same small plot of ground.

This Garden is composed of the following world-famed Kellogg Everbearing Strawberry plants, which are universal favorites and succeed in all soils and climates:

100 Progressive, (The Universal Everbearer).....	Actual value	\$3.35
100 Superb, (The Big Everbearing Wonder).....	"	3.35
50 Peerless, (The Big, Solid Beauty).....	"	2.15
Total, 250 Kellogg's Everbearing Plants.....	Actual value	\$8.85

Our Special Delivered Price for This Complete Garden is Only \$7.50

By ordering a Kellogg Everbearing Garden you actually save \$1.35 in cash and in addition to this cash saving, we also send our book,

"The Key to Strawberry Profits," Free With Your Order

This valuable book tells everything necessary to insure your complete success with Kellogg Strawberries. The regular price of this book is 50 cents, but we will send you a copy FREE AND POSTPAID as soon as we receive your order for a Kellogg Everbearing Garden.

It's to your interest to order your Kellogg Everbearing Garden right now so that we may reserve it for you and so that you may receive this book as quickly as possible and learn how to make your garden give you the biggest crops and highest profits.

Use the Coupon Below — Do It Now!

Just fill in your name and address in the coupon below and mail to us with money order, draft, or check for only \$7.50 and we will ship you a Kellogg Everbearing Garden, all transportation charges prepaid, at the proper planting time this spring.



R. M. Kellogg Co.
Box 51, Three Rivers, Mich.

Gentlemen:—I enclose \$7.50 for which you are to send me a Kellogg Everbearing Strawberry Garden, all transportation charges prepaid, at the proper planting time this spring. You are also to mail me at once, Free and Postpaid, your two books, "The Key to Strawberry Profits" and "Kellogg's Great Crops of Strawberries and How to Grow Them."

**Only
\$7.50
PREPAID**

Picking Everbearing Strawberries in October from a Kellogg Everbearing Strawberry Garden.

Name _____

R. F. D. or Street No. _____



Write for this big FREE BOOK

Whether you order Kellogg's Everbearing Strawberry Garden or not, we want to send you this valuable book absolutely free and postpaid our 1920 strawberry season.

KELLOGG'S Great Crops of STRAWBERRIES and How to Grow Them

This valuable book pictures in colors and tells all about the best and best things in strawberries, such as Kellogg's New Race of Strawberry (big, sparkling beauties), Kellogg's Big Four and Big Late (each winner and big money-maker), Kellogg's Everbearers, which fruit abundantly from early spring until winter, also the world-famed Kellogg's Strawberry Gardens which are reducing the high cost of living and contributing substantial profits in thousands of homes throughout the country.

It gives many unsolicited reports from men and women who with small Kellogg Strawberry Gardens and who now are making big profits each year.

It tells who—made \$10,000 from only six acres last year.
—received \$3,400 from a small three-acre patch right at the field.
—picked 2,200 quarts from a Kellogg Garden—more than 2½ quarts per plant.
—made big profits from Kellogg Strawberries while other growers' strawberries barely paid expenses.

Send For This Valuable Free Book Today

and become convinced how easily you too may enjoy big profits and at the same time the big, delicious Kellogg Strawberries you can use in your own home, free for the asking.

REMEMBER—This valuable book doesn't cost you a single penny. Just your name and address written plainly on a postal will bring it to you absolutely FREE AND POSTPAID. Write for your copy today.

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FARM & FIRESIDE

The National Farm Magazine

MARCH 1920

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U. S. Department of Agriculture



In This
Issue—

What Is a Farmer?

BEST

For Bread—For Cakes—For Pastry

Pillsbury's Best Flour

For "good bakings" *every* baking day

Pillsbury's Best Flour

For Economy—uniformity—flavor

Pillsbury's Best Flour

Because it's Best

Pillsbury's Best Flour

Pillsbury's Family of Foods includes Pancake Flour, Health Bran, Wheat Cereal, Pillsbury's Best, Rye, Graham and Macaroni Flours. All are guaranteed. At your grocers.

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MINNEAPOLIS, U. S. A.



*Working both ends against
the middle.*



Pillsbury's

FAMILY OF FOODS





Illustration shows barn and silo covered with Everlastic "Rubber" Roofing.

The picture below shows the handsome effect secured with Everlastic Tylike or Multi-Shingles in the green tone.



Inexpensive, durable and easy to lay—

BARRETT EVERLASTIC ROOFS are staunch, durable, handsome and moderate in cost. They can be laid quickly and easily by unskilled labor—a big item in these days.

With two styles of *roll* roofing and two types of *shingles* from which to choose, you can use Everlastic Roofings to good advantage on *every* steep-roofed building—residence, barns, silo, and out-buildings of all kinds.

Both styles of Everlastic Shingles and one of the Everlastic Roll Roofings are surfaced with real crushed slate in the natural rich shades (red or green). These colors are permanent and very beautiful. These roofs require no painting.

For buildings where a plain-surfaced covering is wanted, the popular Everlastic "Rubber" Roofing will give you a dependable roof for little money.

Before purchasing your roofing materials, write nearest office for our illustrated booklets describing the styles of Everlastic you prefer.

Everlastic Multi-Shingles—(4-in-One)



Made of high-grade felt thoroughly water-proofed and surfaced with crushed slate in beautiful natural slate colors, either red or green. Laid in strips of four shingles in one at far less

cost in labor and time than for wooden shingles. Give you a roof of artistic beauty worthy of the finest buildings, and one that resists fire and weather. Needs no painting.

Everlastic Tylike Shingles

Made of the same durable slate-surfaced (red or green) material as Everlastic Multi-Shingles, but cut into individual shingles, 8 x 12 $\frac{3}{4}$ inches. Laid like wooden shingles but cost less per year of service. Need no painting.



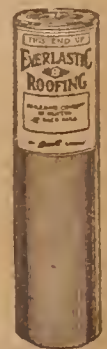
Everlastic Slate-Surfaced Roofing

A high-grade roll roofing, surfaced with genuine crushed slate in two natural shades, red or green. Needs no painting. Handsome enough for a home, economical enough for a barn or garage. Combines real protection against fire with beauty. Nails and cement with each roll.

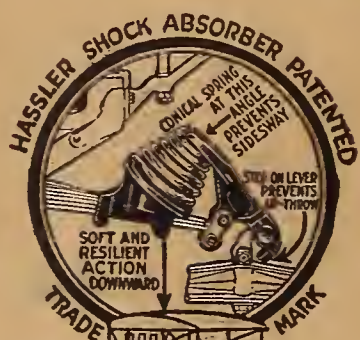
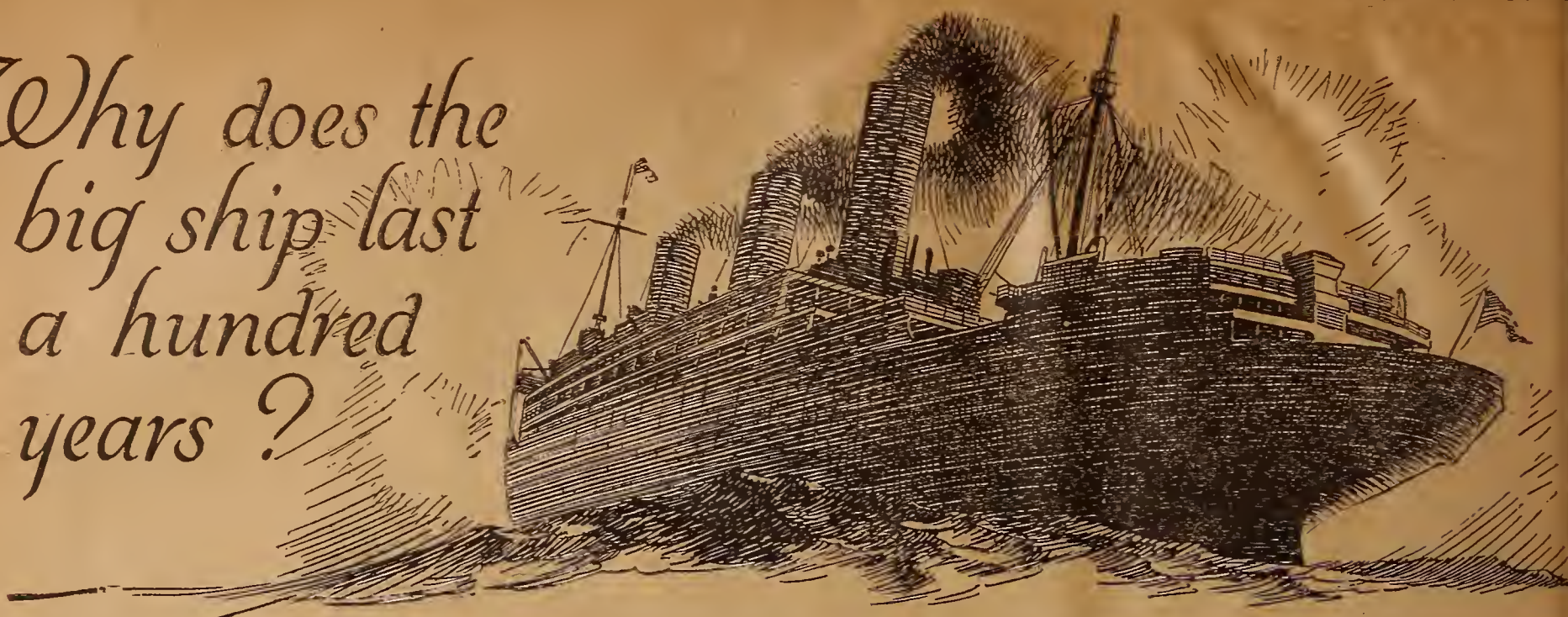


Everlastic "Rubber" Roofing

A recognized standard among "rubber" roofings. Famous for its durability. Made of high-grade water-proofing materials, it defies wind and weather and insures dry, comfortable buildings under all weather conditions. Everlastic "Rubber" Roofing is one of our most popular roofings. It is tough, pliable, elastic, durable and very low in price. It is easy to lay; no skilled labor required. Nails and cement come with each roll.



Why does the
big ship last
a hundred
years?



For Ford Passenger Cars.



This Twin Type for Front and Rear of Ford Sedans.



This Twin Type for Front and Rear of Ford Commercial Cars.



This Twin Type for Front and Rear of Ford One-Ton Trucks.

IT IS not at all uncommon for a big ocean ship to stay in service for a century. Even though buffeted by storms without number, it rides the waves as on a cushion.

Hassler Shock Absorbers are to your Ford Car what the great cushion of water is to the ship. They take up every jolt and jar and prevent vibration.

You actually can add a third to the life of your Ford Car by equipping it with Hassler Shock Absorbers.

Your running expense, including tires, repairs, gasoline, is decreased very considerably. In fact, in tires and repairs there is at least a thirty per cent saving!

And not only is your Ford made a better investment, but a more satisfactory one. It is made comfortable; it steers easier; it is safer; and you can get greater service from it because you will feel inclined to drive it farther.

Regular Hasslers are for the Touring Car, Roadster and the Coupe. There are special Hasslers for the Ford Sedan. Also for the Ford Commercial Car and the Ford One-Ton Truck.

Hasslers do not necessitate the mutilation of the car in any way. They are quickly and easily installed by your garageman. You are privileged to use them for ten days and if you are not pleased they are removed without cost to you.

There should be a Hassler dealer near you. If you don't know him, write us and we'll tell you about our 10-day Trial Offer and see that you are supplied promptly.

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Shock Absorbers

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for Ford Cars and Trucks

The conical springs set at the angle shown prevent sidesway and allow for the most resilient downward action. The springs compress on either upward or downward movements—do not stretch out of shape—do not allow up-throw. Hasslers last as long as the Ford and make it last.

THE PACKERS

Being a Frank Discussion of
The National Food Problem
from the Farmer's standpoint

by E. V. WILCOX



Stuart Hay

THIS we commanded you, that if any would not work, neither should he eat."

If Saint Paul were with us to-day he would merely have to sharpen and make still more emphatic his original admonition to the Thessalonians.

I am often led to believe that much of the complaining about the high cost of living is utterly insincere. Is anyone really trying to save or to live modestly? When you see unskilled day laborers buying silk shirts, silk underwear, and silk socks you can't feel quite so keenly their desperate need of higher wages. When you hear plumbers' helpers arguing the problem whether to buy a \$7,000 or a \$10,000 car, when the \$1,000 typist nonchalantly expresses the fear that she will have to pay \$18 instead of the usual \$12 for her next pair of shoes, you begin to wonder just where to pick up this food problem. You ask again, is anyone really trying to live economically?

A social survey was recently made in a small town in one of the Mississippi Valley States. There were 2,000 families in the town, and among them they had 1,000 automobiles and exactly 62 bathtubs. Now, all of these people were sure that the cost of living was too high, thus making it difficult to buy luxuries like bathtubs. Most of them thought that something should be done about it, that somebody should be made the goat, that the farmer, the packer, the wholesaler, and the retailer should be investigated. In the meantime, just as in the days of Saint Paul, there are too many of us who are "working not at all, but are busybodies."

The farmer is the man who should be consulted first in any study of the food problem. He is the man who produces it. He knows the cost of production, the possible yields, the whims and vagaries of climate; and the present attitude and quality of available labor.

Obviously, we can get nowhere in the discussion or solution of the food problem by merely pointing a finger at the other fellow. All of us, directly or indirectly, are responsible for present prices, and all classes must help to bring living and industrial conditions toward normal again.

Therefore let us begin with the farmer, and find out what he wants and what he thinks can be done to solve the food-price problem. The farmer says there is too much gambling, too much uncertainty in farming, and too many unnecessary risks.

To eliminate these risks as far as possible the farmer wants reliable market news and

forecasts, stabilization of market prices, especially in the case of live stock; big capacity in cold storage, and willingness of packers to take large shipments of live stock in emergencies when the farmer is forced to sell sooner than he had planned; he wants genuinely competitive buying, a square deal at the stockyards, and co-operative control of cold storages as a final measure, if it is necessary, to protect the growers

This is the hopper through which the live stock you produce is butchered, packed, and distributed to the consumer. It is what goes on in here that has caused all the row between producer, packer, and consumer. If we can ever reduce the expense of operating this hopper machinery, we shall all be richer and happier.

the chief stockyards. After estimating the probable selling price according to the best wisdom and judgment he can command, he trims his course with the idea of bringing the steers to market finish at a cost of two cents or more below the selling price. But his steers may be unloaded in Chicago or Omaha on a flat market, three cents off, and his whole operation has been at a loss.

Granted that there is a certain element of gambling in the cattle business, and that the Government can't undertake to make good any gambling losses, it is nevertheless worth while to try to remove all unnecessary hazards. There are astounding fluctuations in the price of cattle at stockyards, and low prices

House Bill No. 13,324, Mr. Armour said: "If the packers could regulate the cattle market they would prefer to have a steady market with an even inflow of cattle, about the same number each day."

To make sure of the attitude of the packers on this point I talked with several representatives of Swift & Company, including Mr. Weld, manager of their commercial research department. Mr. Weld stated most emphatically that Swift & Company would like to have the offerings of cattle and hogs as uniform and regular as possible, with the minimum amount of fluctuation in the number of cattle and hogs unloaded from day to day. Several attempts have been made to regulate the shipment of cattle by naming certain days when special efforts would be made to handle all offerings promptly. These attempts were only partly successful.

Thus far the situation looks hopeful. The farmer demands that some way be found to prevent fluctuation in the number of cattle delivered to the big market centers day by day. And both Armour and Swift, as well as Morris, vouch for the statement that this is exactly what the packers want. But this condition is hard to bring about, even when both sides want it. How are you to prevent a flood of cattle on Tuesday and half empty yards on Thursday? Who knows how many cattle are this very minute en route for Chicago, Kansas City, Omaha, Sioux City, Fort Worth, or Denver? No one on earth, not even the packers.

"Could you give cattle shippers any tips as to when to have their cattle arrive in Chicago on a favorable or at least a steady market?" I inquired.

"Utterly impossible," said Mr. Weld. "We have no means of reaching the shippers. We cannot predict what the market demand will be. And if we guessed wrong, and the market slumped on the day we had suggested for arrival at the stockyards, we would be condemned as gay deceivers. The shippers would never have confidence in us again. The thing is impossible without the co-operation of the shippers."

"How can that best be accomplished?" I asked.

"Hard to say," replied Mr. Weld. "There is a committee of fifteen. We have had several conferences with them. At times there has been promise of much good coming from these conferences. But of late I have become rather pessimistic as to the outcome. There [CONTINUED ON PAGE 23]



The Public

catch many producers who ship on the best available information.

Now, the fellow who puts forth his best effort for six months in producing some good beef, and then is forced to sell it for less than it cost him, feels peeved. He feels peeved particularly toward the packer.

He wonders if somebody withheld from him the information which would have prevented his loss. Didn't the packer or some government agent have information that the market would be flooded that day? If so, why didn't they give him the tip? Why did they stand by and see him lose?

These experiences happen too often. They have caused a loss of confidence between the farmer and the packer. This confidence must be restored if we are to have smooth working relations between farmer and packer. What can each party do toward a satisfactory adjustment?

In the recent Congressional hearings on

of live stock, fruit, and other perishable products.

Should the farmer have all these wants satisfied? After looking at the matter from various angles and talking with numerous fruit growers and stock raisers, I say emphatically, yes.

To take a case in point: The cattleman or feeder requires from three to nine months for a feeding period to put the proper finish on beef. Now, the feeder buys range or farm cattle at the best bargain he can drive, and makes an estimate of the cost of labor, feed, and incidentals. He notes the trend of the live-stock market, and takes account of the monthly variation in cattle prices at

Life as We Live It on the Farm in Dear Old England

By Jack Brooks

THE gentleman farmer, so-called, of Britain knows his business. Whether he is handling sheep and cattle or raising cereals and poultry or specializing in vegetables—potatoes, cabbages, peas, and beans—he puts his back right into it and makes a proper job of the thing. He is no one-horse little piker trying to juggle a couple of hundred acres in the country with one hand, and run a peanut-shelling-machine concern or a furniture-polish company in the city with the other.

All in all he's a bit of a whale for solidity and comfort and the good things of life. His farm is a model of peace and contentment. He builds his nest in a snug little shelter of trees that must have been planted in the year dot. His home is a solid, palatial, brick-and-stone affair, three parts hidden by clinging ivy and flanked by a solid eight-foot wall. In silent majesty the homestead gazes out over the far-reaching rolling pastures, wooded slopes, and rich arable land.

The British farmer and his acres always have a sleek, well-groomed appearance. His fields are all bordered by neatly trimmed hedges set above wide, shallow ditches, and, seen from a distance, look for all the world like a mammoth checker-board ready for a game.

And life on the farm, though not a bed of roses, presents one of the most attractive pictures of health and happiness to be found in the country. There are richer people than the farmer, but there are few happier. Which is what really matters.

Farmer John Bull enjoys more privacy than his American brother. Thick growths of tree and vine and eight-foot walls encompass him. He sprinkles his property liberally with signboards, warning that trespassers will be prosecuted.

Of the good old yeoman stock, big-stomached, rosy-cheeked, slow-thinking, and fussy, but bubbling jollity withal, he ambles around his domains, spluttering jokes here and there, and issuing instructions to farmhands there and here. Dignity, pride of ancestry, and sportsmanship are the three principal pillars in his curriculum. He is lord of all he surveys, and woe betide you if you seek to take a short-cut home across his meadowlands, or get over his five-barred gate looking for mushrooms. He will pursue you up hill and down dale, and smite you hip and thigh if he overtakes you. His young sons go to church Sunday mornings in silk top hat, and his daughters attend the young ladies' seminary, take music lessons, and study two languages.

Mother, between making potato pies and crisp jam tarts and keeping an eye on Lizzie, the pet calf, and cataloguing the vices and virtues of the female kitchen staff and the saucy dairymaids, attends the local corn exchange concerts during the winter, and

patronizes the annual county fancy dress ball New Year's.

Father's social stunts are one of the joys of his career. He belongs to all sorts of agricultural organizations, clubs on epizootic abortion, farmers' unions, county co-operative concerns, farm trading associations, farm insurance societies, and the Lord knows what else. He eats hard, works hard, plays hard, and drinks hard, and is regular devil when he's out. There's nothing the matter with his lungs, either, for when he says "Good morning" at the breakfast table chunks of plaster are sure to fall into Mother's new raisin jelly out in the pantry.

Farmer John Bull is up before the sun in the morning, and is snooping around in the mists of his meadowland for enterprising mushroom hunters or blackberry pickers. Having dealt with these offenders, according to their age and sex, he ambles out over his cabbage and turnip fields. And oftentimes he stumbles across some gentleman crouching in the early-morning mists with a capacious sack at his side, his greedy eye fixed lovingly on a row of hardy little winter plants that he thinks would look much nicer transferred to his own cabbage patch over in the village.

Undoubtedly, the early morning is full of promise for Father,

and as he steps softly across his property, with his dogs at heel, his nose gleams challengingly through the fog, and he prays for a poacher or a vegetable-plant thief, or even a mushroom connoisseur.

While the "guy-nor" is out casting for trespassers the rest of the household is stirring. To-morrow is market day, and everyone wants to get cleaned up on his work nice and early, so he can put in an appearance at the weekly event. And now the sun is through and the mists have rolled before it like November leaves before the nor'wester, and one can see the sheep dotting the far meadowlands, and the scent of the hayricks comes like a tonic before breakfast.

There goes the milking herd (they are milked twice a day), and way up there on the skyline is John, the eldest son, running the tractor over that bit of north-end arable. Over in the far-stretching cabbage fields three of the farmhands are busy with dibble and hoe, setting out the hardy little plants that fill one field three quarters of a mile square.

Already that field has supplied wagonload upon wagonload of cabbages having hearts as big and as hard as Mother's stock pot. All night long these cabbages travel on the great London road, pulled by hefty, great, sleek-coated farm horses, to



reach the big metropolitan markets at dawn. Jean and Biddy know these market streets as well as they know their own stables, 20 miles back on the farm.

Over the breakfast coffee (very often its tea) the household compares notes. The "guy-nor" is to harness up Bodacia (she's needing the exercise) and "pop over" to the landlord of the Plough, who has been "nibbling" at a couple of farm hogs for the last week. At the same time he will drop in on the milk combine's district agent and arrange for delivery of that surplus milk. He won't be home for lunch but will be for seven-o'clock dinner.

And while he's about it he will have the milk agent call up those fertilizer people over his phone for him. For, of course, the rural telephone line, as known in the States, is simply not in existence here. Nine farmers out of ten are not on the phone, and if you speak phone to the average agriculturist he's not quite sure whether it's a new sort of ear trumpet or just a garden squirt you have reference to. Personally, the farmer here is suspicious of such "new-fangled contraptions," and prefers to do his business either in person or by letter.

John, who keeps tab on the farm tenants who do the majority of the work on the land, announces he is going to have a new five-barred gate put up down on the paddock, and is cleaning up the pea haul out on the "ten-acre."

Mother decides how much bread she is going to bake, what quantity of butter she will need churned, and whether she can put that green gage jam preserving off until the week end.

"Sis" takes charge of the butter-making and the bacon-curing. The two younger sons, being away at school and only home on vacation, don't figure in the program. And so, as soon as the eggs and bacon and the toast and deviled kidneys and scones and marmalade have been tackled and put to rout, everyone gets busy.

Before the "guy-nor" climbs into his trap and tucks the Scotch plaid rug around his knees, he dashes off a couple of letters in the library and selects a cigar from his special box in the cabinet. Then, with his hat at a rakish angle, his horseshoe tiepin gleaming in his smart cravat, and his leggings glistening from the recent application of kiwi and elbow grease, he is off to town with a flourish of whip and a slither of sparks.

The farm tenants—men, women, and their children—who work out among the crops and the cattle all day are quartered on the farm acreage. They have cozy little

cottages, rent free, and their own little vegetable gardens and flower beds. The kids work in the pea and bean fields with mothers in the fall, and help with the hay-making and the threshing in the summer.

And the field women—great, hearty, picturesque wenches, their heads encased in huge poke bonnets and their waists encircled with rough sack aprons—squat and move among the crops all day, only pausing at intervals to demolish great chunks of bread and farm cheese, washed down with cold tea or nut-brown ale.

Quite distinct from the land girl are these pea pickers. The land girl is now practically demobilized, and you do not so often see her slim, smock-robed figure and strong, leather-encased legs striding among the cattle or the hogs, or perched on the end of a tractor.

It is after late dinner, when the outside work is done for the day, and the blinds are drawn and the fire burns bright on the wide hearth, that Farmer John Bull has a peg of whisky and plays his son a couple of hundred up at billiards.

There is much to discuss. There are the Government's new agricultural bulletins and monthlies to scan through, the new soiling system of feeding dairy cattle to study, and also that question of extra money in an increased potato acreage. Since the new farina mills of Britain started up, there is something in this potato-growing for farina worthy the farmers' attention. For the mills will take all the potatoes farmers can give them, since farina is in great demand in the textile trades, and the farmer can dispose of partially blighted potatoes to the farina mills.

And then comes market day. Immediately after breakfast, before the sun has yet taken the chill off the earth, the country roads begin to teem with life. Youthful farmhands steer flocks of sheep toward young farmers drive cheerily past with calves netted down in their low tumbrils bellowing milch cows amble lazily in the same direction; gigs, phaetons, motor cars and buggies stream past; farmers, their wives, sons, and daughters, muffled against the cold, all having one object in view—

Something About Jack Brooks

JACK BROOKS is a young Englishman whose home is on Douglas Road, Romford, in Essex, England. He had been several years in the United States (Indiana, to be exact) just before the war, after the beginning of which he left his work here and returned to serve three years in the British armies. We quote what he says.

"Our mob (London Scottish) was in the trenches near Arras and Vimy Ridge in June, 1916, and we didn't stop going until Armistice. I had a year in France, another year in Macedonia and the Balkans, another year in Palestine and Egypt, and then back to France for the last six months of the push. During that time I was a Lewis gunner, a muleteer, a rifleman, bomber, transport man, and camel loader, finally finishing up after the Armistice at Etaples as a cook!!!"

I was quite lucky and was in hospital only twice, once as the result of a mule kick on the knee, which took me to Malta for a spell, and again when a nice kind gentleman in a fez took a mean advantage one moonlight night and knocked out my wisdom tooth with a six-o'clock aim on the banks of the historic Jordan. I lost only that one tooth (although for the moment I thought I had mislaid my entire face), the bullet making a clean wound."

The author's own idea of how he looked in uniform



"Ow about a bit er bread an' cheese, 'Liza?"
The farm help eats frequently while at work

the town market of cattle, corn, vegetables and agricultural machinery.

Most likely the farmer has got some of his own stock or produce in the market square, and if he has a good day he will clean up a few hundred dollars. He will make a day of it, attend most of the auctions, look over his neighbor's displays, buy a lot of titbits for his table (the missus will see to the draperies and the raiment but gains dear to the [CONTINUED ON PAGE 6])

Six Big Points to Find Out About Before You Buy a Tractor

By F. W. Ives

Farm Engineer, Ohio State University, and Corresponding Editor of Farm and Fireside

IF YOU are thinking of buying a tractor, either now or in the future, this article is aimed to help you determine, first, whether you need one, and, second, what kind to get for your particular farm.

What I say here is not based on guess-work, but on a close following of the tractor industry as it has developed, on actual field tests in which tractors of all kinds competed, and on the actual experience of real farmers that I have come in contact with.

The tractor has come to stay. Many changes are bound to be made, of course, but some of the manufacturers are arriving at models that look like a tractor should look. Sturdiness, with ease of manipulation, economy of fuel, reserve power without overweight, these are some of the points which are visible on the surface as brought out on recent demonstration fields.

Granting that the tractor has come to stay, and that it is being standardized into a few classes and ratings, the first question that I should ask myself is: "Can I afford to own a tractor?" This, I should say, is point number one. The question will have to be decided on its merits in each individual case, as no two cases are alike, and generalities don't accomplish much in solving the problem.

If I buy a tractor, run it home into a shed, and never afterward touch it, it will cost me a certain sum daily. That daily cost to me is made up of interest, depreciation, taxes, and, if I am careful in my accounts, storage and insurance. Let us say that I have paid \$1,500 for my tractor. I will then charge off the following items:

Interest on \$1,500 at 6 per cent	\$90.00
Depreciation at 10 per cent	150.00
Taxes	15.00
Insurance	5.00
Storage at \$3 a month	36.00
Total for one year	\$296.00

This amounts to 81 cents daily, whether the tractor is used or not. Some will say that the depreciation figure is too high for an idle machine. Perhaps so. Suppose that as much change for the better occurs in the next ten years as in the past ten years, could you afford to operate the old tractor? Very well then, if I expect to get return for my money I must operate the tractor as many days each year as possible.

Since there is belt work as well as plowing, seed-bed preparation, and harvesting, this may be arranged by a further expenditure for power machinery. Perhaps I can arrange with my neighbors a co-operative scheme for filling silos, shredding fodder, husking corn, grinding feed, driving medium-sized threshing machinery, or sawing wood, thereby keeping the tractor busy and saving more overhead expense by working the power-driven machinery more days each year.

The size of the farm and the acres of tillable land is also a point (point number two) which determines the size of the tractor as well as entering on the question of first purchase. A market gardener running 10 acres might be regarded as mentally incompetent if he purchased a three-bottom plow outfit. On the other hand, a farmer having 250 acres of tillable ground might be open to some criticism if he tried to work his farm with a garden tractor.

The matter of owning a tractor, then, rests largely upon the common sense and judgment of the individual farmer. Results have shown in a large way that about 60 per cent of present tractor purchasers feel that the tractor has cut down the cost of their farming operations, about 20 per cent feel that the cost has not been reduced, while the remainder are non-committal or do not know. This argues well for the common sense of the average farmer, as heretofore he has had little to guide him in tractor purchase except a few scattering tests.

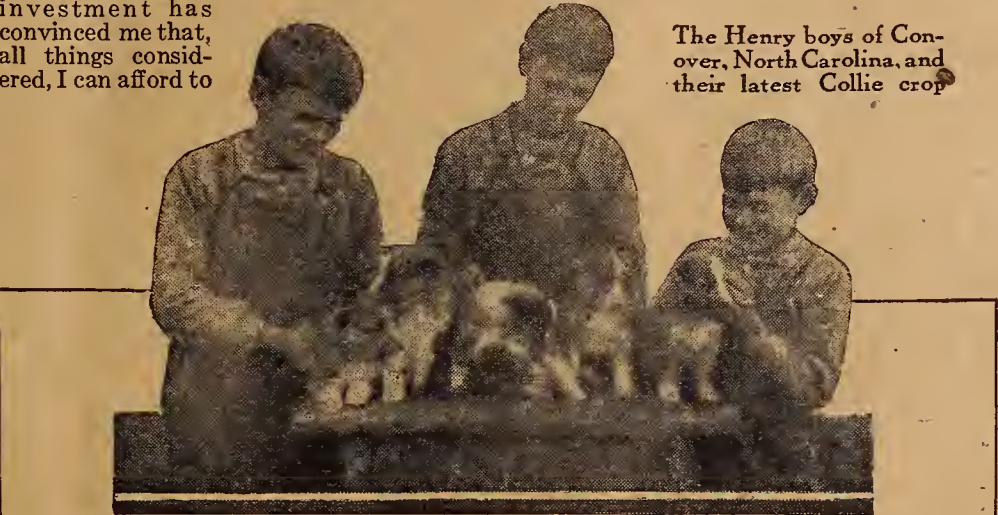
The average farmer uses his tractor

about sixty days each year, with an average annual repair bill of \$21. Doing this, he finds that on the average he replaces two horses on his farm. If a man is now operating a farm with two horses, it is doubtful if he could afford the tractor unless he can accomplish all his work with its aid. Even if he has a large farm with a side line of colts, he may not care to dispose of his brood mares in favor of the iron horse.

The fact that about 80 per cent of the tractor owners in Ohio regard their tractor purchase as a good investment has convinced me that, all things considered, I can afford to

be repaired and move off the field under its own power. The conditions under which the tractors operate at these demonstrations are severe. Moreover, they get two chances to work on a dynamometer of the latest type to demonstrate that they can live up to their rated drawbar pull.

I am very likely to pick out a tractor at these demonstrations because fly-by-night tractors are seldom entered in such a "show me" contest. On the other hand, many good tractors do not enter because of distance or shipping tie-ups, or for other rea-



Eugene, Percy, and Herman

THE man who said "pity the boy who hasn't known the joys of having a dog," wasn't thinking of the lads in the above picture, who are Eugene, Percy, and Herman Henry of Conover, North Carolina. Six years ago Mr. Henry bought an eight-weeks-old Collie for them. The puppies in the picture are one of the many litters which the mother, Zip, has presented them. Being pure-bred, they are always sold for a neat sum, and the boys have the fun of raising them. A farm without a dog is indeed a strange place, and a faithful dog properly trained will save his master many steps besides being a delightful companion. We read an article the other day by a man who claimed that the dog did not deserve his high place in man's affections, since a hog is much more intelligent and, therefore, makes a better pet and companion. Without entering into a discussion of the comparative traits of dogs and hogs, we want to say that those who prefer hogs are welcome to them. We will stick to old Shep and Buck for a while. Imagine a fat porker, no matter how intelligent, chasing a rabbit or bringing in the cows! Can you? We can't. Hogs are all right in their place, but we much prefer to have a Collie decorating our front steps, to a Poland-China.

A. S. W.

own a tractor on an average 160-acre farm.

Having made a decision to purchase a tractor, you of course will not rush out and buy the first tractor that happens to be for sale. Tried and proven reliability at a reasonable first cost, an assurance that repair parts will be forthcoming when needed, and that reasonable service will be available, are some of the things I wish to be sure of. They constitute point number three.

In our own State, I may form a pretty good opinion as to the reliability by following the performance of the tractors in the demonstration arranged by the College of Agriculture. Each tractor entered in the first demonstration must continue in all the others, and if it breaks down, it must

sons. The fact that over 600 out of 700 farmers feel that their tractors are reliable will lead me to make my choice out of those present at the demonstrations.

The presence of a general agency with a large stock of repair parts, within easy reach by telephone and railroad, will also have a large part in my choice. That means much to me, for if a valve stem breaks when I am filling the silo I can get the new part quickly. Better still, if the local dealer has a competent mechanic to install the new part much time may be saved. Service of the right sort is very much worth while to both farmer and dealer, and it does not of necessity have to be free service, either.

In this question of reliability and service, the advice and counsel of the people at the College of Agriculture is very much worth while. Their tests of brake horsepower, as well as drawbar pull, and their general observations in the whole field give them a perspective seldom attained by the individual farmer who has observed but a few. While these men will not recommend any one tractor, they are willing to name a number of the outstanding features of some of the leading makes. Incidentally, their tests have resulted in much improvement by manufacturers who are constantly on the lookout to see that their product lives up to their rated capacities.

"What size?" would be the next logical question (point number four). The tendency seems to be toward a two-bottom rig for farms of from 100 to 150 acres, and three-bottom rigs on larger farms. Certain soils require much more capacity at the drawbar than others, so that many tractor owners, upon being interviewed, say that their next tractor will be larger in order to get reserve power when needed. Thus, if I purchase a three-bottom rig I am sure that it will pull two bottoms under all conditions.

The further west we go, the larger the tractor on the average farm. In order to use the larger rig economically, it may be necessary to move fences and enlarge fields, but in the long run this would be the best thing for most farms. Another of the advantages of the larger tractor is that it will handle belt jobs more satisfactorily.

The type of tractor may be based on several things: the number of wheels, the number of cylinders, and whether kerosene or gasoline burning are fuels which may enter the discussion of type. Classed according to wheels, we find two-wheel, three-wheel, four-wheel, and crawler types. The recent tendency seems to be to get away from the three-wheel type, as many manufacturers of this type have remodeled their tractors by adding a fourth wheel. Some tractors run wheels in the furrow. Others run wheels all on the land. Some of the crawler types use two wheels for steering, while one or two crawlers or track-layers act in propelling the machine.

The two-wheeled tractors are being used quite extensively in cultivating corn, and in the form of garden tractors. Models now on the market have been extensively tried, and seem very successful. Both wheels are used for tractive effort, and practically the whole weight of the machine rests on these wheels.

The three-wheeled rigs usually have two drive wheels, and a third for steering. Some have one drive wheel and one steering wheel, and one wheel for balancing the machine. Of the two, the former seems most successful. Few three-wheeled models are now seen.

The four-wheeled type, having a unit frame construction, is quite popular. A great many manufacturers seem to be swinging this way. The four-wheel leads all others in numbers, and will likely continue to do so for some time.

The crawler is very popular on account of its ability to travel over the most uneven surfaces. One of its particular advantages is its ability to get over soft or mushy spots.

The location of the belt pulley is a matter of some importance. Watch for ease in lining the tractor up to a machine; also see that there is plenty of clearance for the belt. A belt dragging over an axle or rubbing the edge on a wheel is due to run a short life. Some pulleys are almost inaccessible for lining up, and this must be done by guess in many cases.

The single, double, and four cylinder motors all have representatives in the tractor field. The single-cylinder machine has practically disappeared. Generally speaking, the single and double cylindered machines are classed as slow speed, usually operating at about 600 revolutions or less. Four-cylinder tractor motors operate up to 1,800 revolutions per minute.

According [CONTINUED ON PAGE 30]

Here Are the Points, in Brief

1. On the basis of the amount and kind of work I have for it to do, will any kind of tractor be a paying investment?
2. What type of tractor is best adapted to my size and kind of farm?
3. Can I get one of this type that is reliable, and for which there is a service station with repair parts near at hand?
4. What size, number of bottoms, and kind of fuel should I have in my tractor?
5. Is it comfortable and easy to operate?
6. Am I willing to house and care for it properly after I get it?

These questions are all taken up in detail in Mr. Ives's article. If there's anything special you want to ask him, write care of FARM AND FIRESIDE, 381 Fourth Avenue, New York City, enclosing stamped self-addressed envelope, and he will gladly answer.

THE EDITOR.

My Sheep Calendar, and How It Helps Me Make a Profit on My Flock

By Harry L. Carleton

IN MY business of sheep production I am guided by a tickler. It does not produce laughs, however, but reminds me from month to month what is to be done, and what my duties as a sheepman will be. I call it my calendar. Every business man who keeps close tab on his work has one, but in most instances they are called ticklers.

I compiled this calendar from the things I have learned from many years' growing sheep. It serves its purpose, and is well worth the time spent in compiling it. I run a general live-stock farm in addition to having sheep, and many times, being very human, I am apt to forget things in the rush of other work. So this tickler hangs over my desk in our living-room, and I can't help but see it every day.

It used to be that I kept it in a drawer in the desk, but I forgot some things once, and thereafter I put it before me so I could always see what was to be done. The sheep business is a peculiar one in the respect that you have to take extra good care of the sheep. It is amazing at times what they will stand; and at other times, that they die so easily.

Sheep production is increasing in the country east of the range. More and more sheep are finding their way onto corn-belt farms, and a large number of farmers have established small flocks of ewes. The calendar may help you too, if, you have never handled sheep before.

As you will see, I have arranged my calendar by months. In each space I have placed the things which need attention during the next thirty days. On my own I have other information, such as weather conditions during the various months, as I have observed them in my locality, the average price of lambs over a ten-year period, and the average price of wool for a number of years. I am not including these here because they may not prove out right in each year, and the man guided by this information would be the loser. You can get your own figures from your state agricultural college or from the U. S. Department of Agriculture, if you like.

It has been my experience that there is as much money in sheep as in any other kind of live stock. In the first place, however, to succeed with sheep one must love the business. They are peculiar cusses in some ways, but once you get to know them it is quite easy.

SHEEP, I find, are a good balance to my live-stock farm, and I believe, where conditions are favorable, the same will be found true in any place. There are places to which sheep are not adapted, and will not do well.

I have found that the educational campaign to increase sheep production has been misinterpreted by some farmers. It has been pointed out that sheep are good eradicators, and will clean up the farm waste. These points have been stretched too far by some men in their first attempt with sheep, and they market stuff which is not fat. The chances of losing money are big.

I, too, use my sheep to clean up the waste, and to eat down weeds; but in addition I have some good pasture for them, and to the lambs I feed a little grain until marketed. The ewes through the off season get along on good blue-grass pasture, and help to clean up the weeds in the corn-field. They run over the stubble too, and, in fact, have the run of the whole place.

I aim to keep the sheep moving—that is, never let them stay too long on one pasture or field. Stomach worm is one of my biggest enemies, and the same thing is found true on most corn-belt farms where sheep are raised. The Western men never had this trouble, because they are not limited to 240 acres, as I am. To avoid worms, keep your sheep moving.

Rotating pastures, I have found, will do much toward warding off the pest; but it was necessary for me a few years ago to get rid of all of my sheep on this account. I let the pastures rest a bit, and then went into the business again. Drenching will sometimes cure a sheep of stomach worm, but I wouldn't advocate this for anyone

but an experienced sheepman. The danger of choking the sheep is too great.

A lamb crop of 100 per cent and better can be expected if ewes get the proper care. This extra per cent is a big item, and should not be overlooked. One can imagine what it means to have a lamb crop of 150 per cent. This is not common. About 130 per cent is the best I ever had. I consider this real good, in that I do not devote all of my time to sheep.

Care at lambing time is a big item in the percentage of the crop. One must be with the ewes at this time. I have found that it is generally safe to leave them between the hours of 10 P. M. and 4 A. M. I don't know why this is, but I suppose nature believes in allowing the sheepman a rest too. I am glad of it, anyhow. Looseness of the bowels, too, is another important feature. Laxative feeds will bring this about. I have found silage

some. You know, flies bother the sheep, getting on their nose, and flies do not bother much in a dark place.

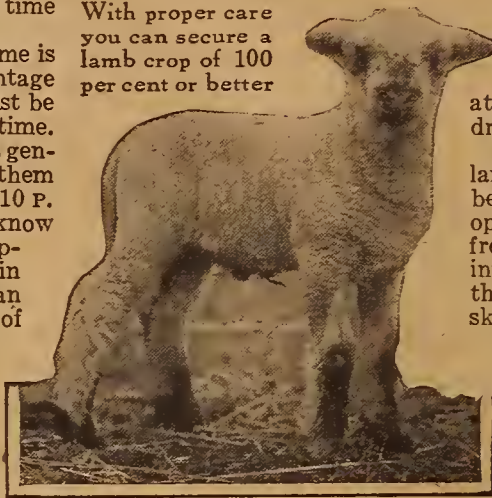
The winter shed is a barn, opened to the south, with doors which can be closed when the weather is too severe, or when there is a heavy snowstorm. It is of ample size, well ventilated and lighted. Windows, swinging from the top, serve as ventilators.

I think this is a good idea, for I can regulate the ventilation, always keeping a supply of fresh air, and at the same time prevent drafts.

I have close-wooled lambs. I think they are best for the North. The open-wooled lambs often freeze because snow gets into the fleece, melts, and then freezes close to the skin.

My winter shed has a board or plank floor, and is big enough for the sheep to move around. I aim to keep it dry during the winter, and well

With proper care you can secure a lamb crop of 100 per cent or better



The Sheepman's Calendar

JANUARY	MAY	SEPTEMBER
Spring lambs come. Provide shelter for ewes. Sale of fed lambs.	Shearing. Dipping before going on pasture. Sale of early lambs.	Sale of wool. Breeding for spring lambs.
FEBRUARY	JUNE	OCTOBER
Start feeding grain to ewes.	Shearing. Sale of lambs.	Breeding for regular lambs begins. Fall dipping. Turn lambs into corn. Buy feeding lambs, also breeding ewes.
MARCH	JULY	NOVEMBER
Regular lambing season opens. Castrate and dock lambs. Shearing commences.	Sale of lambs. Sale of wool begins.	Breeding. Buy feeding lambs and breeding ewes.
APRIL	AUGUST	DECEMBER
Lambing continues. Castrate and dock lambs. Shearing. Market spring lambs.	Sale of wool. Breeding for early spring lambs.	Breeding. Early feeding lambs start to market.

and bran to be splendid for this purpose.

I generally replace my culled ewes each year with the best ewe lambs from the crop. In getting a start, I bought grade Western ewes, about two years of age, and used a pure-bred buck on them. A ewe is generally kept until she gets broken-mouthed. However, after they reach the age of four I prefer to cash them, and prepare for this time by keeping my lambs. By doing this, and changing bucks, one can breed up a fine flock.

Housing is an important feature. Although my calendar doesn't mention it, it is very necessary. I have the buildings so there is no need of calling my attention to it, although, you will notice, that one month calls for sheltering the ewes. I have no elaborate equipment—mine was built by myself. It is rough and crude, but answers the purpose.

I have two sets of buildings, or, rather, two sheds—one for summer and one for winter. Both are important. The summer shed consists of a small hut-like affair, which is very dark and dry. This is used by the sheep when flies are most trouble-

bedded. I always like to keep the racks filled with nice, bright hay, too, when the snow is too deep for the sheep to get out.

Wool will sometimes pay for a big share of the feed bill, so all of these precautions are worth taking.

My chart shows that, in normal years, the best prices for wool are from July on. Lambs, on an average for ten years, have been best on the May market, with March, April, June, August, and September, as good times to trade. I like to get my lambs on the market as early as possible, and for that reason never take them off grain.

I turn my bucks in with the ewes along about the time of the first cold spell, which usually begins in October. The cold seems to bring on the mating season. Besides, I like to have my lambs dropped in February, so as to get them to market early. Of course, lambs coming so early need more attention, but the price is better, and at that time of the year I have lots of time to spend with them; later on, I am busier.

About the time the bucks go with the ewes I start feeding a little grain. Probably a handful of oats or corn—not a fat-

tening ration, but just enough to start them gaining, and to help develop a good strong fetus. As lambing time approaches I feed a bran mash occasionally, with little more grain and plenty of bright clean alfalfa.

When lambing occurs, the ewes are in good condition, and have a good flow of milk. This is very important. I have found a little oats, corn, alfalfa or clover hay, and corn silage make a good ratio for the pregnant ewe.

As lambing time approaches, I fix the shed so as to be able to care for them. I keep the lambs in the shed at night, as soon as it gets cold, closing the doors when necessary. Usually it gets mighty cold along in January.

I have my shed arranged so that I can erect a set of pens, and then gridiron the pens with small panels—big enough for ewe and a lamb or two. The idea of this is to put the ewe in there with her offspring until it is strong enough to mingle with the rest and get to know the mother. A few days or a week will suffice. This gives the lamb a start, and prevents the possibility of orphan lambs.

I am especially careful when ewe lamb drop the first one. They are not accustomed to mothering a lamb, and it is necessary to get them thoroughly acquainted

THE ewes should be quiet the last few days before lambing. The grain ratio should be gradually reduced, and plenty of warm water should be accessible, for fever is likely to develop. This is especially true after the lamb has been dropped, and I watch that the ewes do not drink too much at once. I prefer to let them have little every now and then.

At lambing time I am always on hand to assist the ewe if necessary, and to care for the lambs. I wipe the nose and mouth of each lamb as it is dropped, clearing away any discharge that may collect. Sometimes it is necessary to help the ewe, when the lamb is exceptionally large.

After lambing time, feeding the ewe is highly important, but I don't put her on full feed right away. Instead, I give her some nice, clean hay and a handful of grain, increasing it gradually as she recovers. I always want a good milk supply, and grain feeding helps this.

As the lambs show signs of nibbling at the ewe's feed, I fix a creep for them, in which I put ground corn and oats. So they will learn to eat quite readily. I start feed the ewes grain, and within a short time have them on a fairly good feed of grain, silage, and hay, with a handful of meal.

As the season progresses, I feed the lambs more grain. This is continued until the pasture season arrives. If it is too cold, and the grass not up well, I still feed grain until it is right. When grass is ready, turn the ewes and lambs out, taking them feed from the ewes. I figure that the grain will provide enough milk. I never take the feed from the lambs, but on good grass I don't feed much.

Rye makes a good early pasture, so do wheat. Besides, there is not much feed in the field at first, and it teaches the lambs to eat grass. After these fields have been cleaned up, I turn the lambs on some bluegrass, which is fairly high at this time. I keep them on pasture until ready for marketing. I never wean the ewes until they are about three months of age. By that time they are quite big, and if fed grain along will go right on gaining. I have found from sad experience that grain-feeding before weaning is a good thing.

Thus the lambs do not have to learn to eat grain after being taken off milk, as they go right on gaining. If not fed, they are liable to lose their baby or milk fat before they commence to eat grain. Everything counts, you know, in getting them to market as early as possible.

Castrating and docking is a job that is important. A long tail detracts from the market value; besides, it is liable to catch impaction and disease. Castrating adds to the market value, makes the male lamb quiet, and they will put on flesh more readily.

The Thief Who Came Over from Europe to Rob Your Farm



The European corn borer: male moth

By J. F. Duggar

Director Alabama Experiment Station and Corresponding Editor of Farm and Fireside

WHAT would be the effect on Southern agriculture if the European corn borer should spread to the South? This is the question which the editor of FARM AND FIRESIDE puts to the reader.

I have too much confidence in enlightened public sentiment at the present date to believe that the European corn borer will be allowed to reach Southern cornfields or even greatly to extend its area beyond the district now devastated in one section of Massachusetts and in one small district in New York.

Yet I am reminded only that a few decades ago another insect, which has since proved to be the cause of incalculable expense to Southern farmers, and of tremendous reduction in the American cotton crop—namely, the cotton-boll weevil—made its first entrance on American soil.

The writer is in position to appreciate the untold damage that the cotton-boll weevil has caused to individual cotton growers, to the nation, and even to the world. This is perhaps his best qualification for urging that necessary steps, no matter how expensive, should be taken to prevent the spread beyond its present narrow limits of the new crop pest that is parallel to the boll weevil in its destructiveness.

Warfare against the cotton-boll weevil, while difficult and expensive, is simpler, and to a certain extent more practicable, than would be a contest against the European corn borer if widely distributed.

This is chiefly because the cotton-boll weevil confines its attacks to one plant—namely, cotton—and if deprived of this it is deprived of all food. On the other hand, the European corn borer, while preferring corn, attacks also, to a less extent, a wide range of economic and weedy plants, many of which occur throughout the South—for example, beans, oats, turnips, ragweed, dock, and numerous wild grasses. While this insect has but two generations in the rigorous climate of Massachusetts and New York, we might expect it to have several additional generations in the South, thus many times multiplying the myriads of insects that might descend from a single interloper over in the old cornstalks. Its control or extermination, if the insect should once spread over the South, would be, by all present indications, impossible, not alone because of greater number of generations, but also for the following reasons:

The average yield of corn per acre is here lower than in the Corn Belt, so that there would be less justification for the expense of completely destroying all remains of the corn plant and of other infested vegetation. Even on the violent supposition that such expense would be justified on fields so fertile as to afford a large yield if protected against attack, the destruction, by fire, of all plant residue would greatly reduce the fertility of such fields. Moreover, the South, unlike New England, would probably be unable to get any partial protection against the attacks of this insect by so shifting the time of corn-planting as to have no tassels available at the time when the insect is ready to deposit its eggs, when it prefers the corn tassel for such purposes, although able to substitute other parts of the corn, and of other plants.

As indicating this last difficulty, let us remember that the corn-planting season in any one locality in the Cotton Belt may extend from early in March to the middle of June.

In short, if we assume that the highly improbable will happen, and that the European corn borer will be permitted to invade first the Corn Belt and then the South, we should witness in the South the almost complete abandonment of corn culture for at least a year. What would the abandonment of corn culture in the South mean to Southern agriculture, now well started on a course of diversification, through which it is able to ship packing houses in the South and in the Central West thousands of carloads of hogs—for example, about 3,000 carloads in one year from the State of Alabama alone? The answer presents a prospect too dismal, as well as too improbable, for contemplation.

Instead, let us rather be concerned with such arousing of public opinion as will require the taking of the necessary steps by state and federal authorities for the complete eradication of this unspeakable pest while still confined to its rather narrow limits within small areas in Massachusetts and New York. Let the farmers of America, and its business men as well, act on the motto of the French soldiers at Verdun, "They shall not pass."

What You Can Do About It

FEELING that you would be interested in knowing what a real menace the European corn borer is to the corn and other crops of this country, we asked Mr. Duggar of Alabama and Mr. Call of Kansas to give you the facts.

The corn borer has actually invaded this country, and is now robbing the cornfields of Massachusetts and part of New York. If it is not controlled in these two places it will spread all over the country—and you will be one of its victims.

Only the Federal Government and the governments of New York and Massachusetts can stamp this menace out, because it is now confined to portions of those two States.

It may be well, however, to be prepared against even the seemingly improbable invasion of your part of the country. If you wish, you can get Farmers' Bulletin No. 1046 by writing a card to the Department of Agriculture at Washington, D. C., and it will equip you to fight the borer should it ever show up where you are.

THE EDITOR.

By L. E. Call

Professor of Agronomy, Kansas State Agricultural College, and Corresponding Editor of Farm and Fireside

THE European corn borer has recently appeared in America in the States of Massachusetts, New York, and New Hampshire. It promises to be one of the most dangerous and destructive insects that has ever been introduced into this country. Dangerous because it threatens corn, the most important cultivated farm crop of America, and destructive because in its European home it has been known to destroy as high as from 50 to 90 per cent of the corn crop in fairly large areas of country.

The insect was first discovered in Massachusetts in 1917, and is thought to have been introduced into the State as early as 1910 in shipments of hemp from Europe.

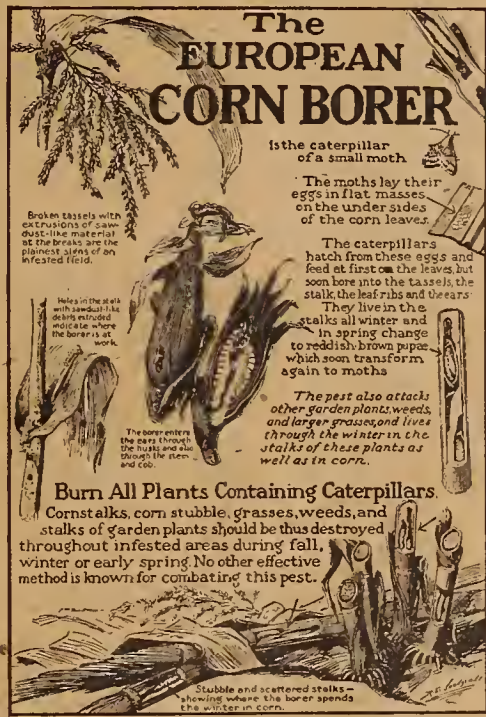
The European corn borer has been called the billion-dollar insect, and very properly so. Should it spread, as it certainly will if unchecked, into the

great Corn-Belt States of the United States, and prove as destructive as in Europe, the losses from the insect may exceed in any year a billion dollars.

The value of the corn crop of New York alone, for a single year, has exceeded fifty million dollars, and that of both Illinois and Iowa more than four hundred million, while the value of the corn crop of the entire United States in 1918 was three and one-half billion dollars. The destruction of 30 per cent of the corn crop of the United States would mean a direct loss to the corn growers of over a billion dollars, and an indirect loss to the live-stock interests and to society of a much larger amount.

The injurious work of the insect is not confined to corn. It has been found in a number of different crop plants in Massachusetts, and in Europe is known to injure cotton. It is reasonable to expect that if the insect becomes distributed over the United States it will injure, in addition to corn and cotton, such crops as sorghum, millet, timothy, and other large-stemmed grasses, as well as many kinds of vegetables.

The corn borer does its injurious work as a small caterpillar that first starts work on the leaves and tassel of the corn plant. Later the older caterpillars enter the stalk, and tunnel through all parts of the plant, even passing through the stem into the corn ear. The plant is weakened, and when



injury is severe the crop lodges and both fodder and grain is lost.

The insect from every indication is very difficult to control. The boring habit makes it possible for the pest to be easily carried by the shipment of infested plants or parts of plants, such as cornstalks or corn ears. It can, therefore, spread rapidly by natural agencies. There seems to be no satisfactory way of controlling it by cultural methods in the field, and as far as is known there are no natural enemies, even in Europe, that will keep it under control.

The situation presents a national problem. Not only is every corn grower directly interested in the pest, but every live-stock man who depends upon corn for feed, and every citizen of the nation, who would find that a reduction in the corn crop would result in a higher living cost.

If the insect is to be exterminated in this country, it will call for the best of co-operation from the farmers in the territory where

the pest occurs, the best judgment of state and national officials in administering the work of extermination, the most accurate advice of skilled experts in planning the work, and the interest and sup-



And this is the female moth

port of every American citizen to see that sufficient public money is available to finance the work.

Some have questioned the extent of the injury that the insect may cause, and think that the entomologists of the country are unduly alarmed. But can we afford to take any chances? If work of extermination is delayed until the insect has spread over a large territory, it will either be impossible to exterminate it or the cost of extermination would be prohibitive.

The territory now infested is small. This is the time to act. Every available agency at the command of the state and national governments should be put to work upon the problem, and the pest driven out of the country without delay. These things should be done, and done quickly:

1. A thorough survey made of the corn-growing regions to determine accurately the full extent of the area covered by the insect.
2. Experimental work started on a large scale to determine the best and most economical methods of destroying the pest.
3. The best known methods of destroying the insect should be used on every acre known to be infested by the pest.

A program of this kind will call for careful planning and liberal appropriations of money, but the more money invested in the work at the start, provided it is wisely used, will mean the greatest saving in the end. Every citizen of the nation, both farmer and city man alike, should take a personal interest in this problem, and see to it that sufficient public money is provided and that the money is properly and wisely used.

Is the Boll Weevil Licked?

I DON'T know of any work that the Department of Agriculture is doing which promises greater possibilities than the efforts of a group of persistent "bugologists" who appear to be on the eve of victory after a long, hard fight with the cotton-boll weevil. The boll weevil, you know, has been considered unconquerable. Entering the Cotton Belt from Mexico in 1892, I believe it was, this pest has steadily advanced, year by year, until the greater part of the Cotton Belt now is under its curse. Nothing could stop the boll weevil.

Remedies without number were tried. He continued to spread, and his heavy yearly toll of the cotton crop grew larger and larger. But all the while the entomologists were working. Last year the Department announced that control seemed to be near at hand. Experiments were showing that poisoning the boll weevil's drink—calcium arsenate dusted on while the dew stands on the plants in the morning—was doing its work. The announcement was made so late in the season that there was not time for cotton growers to try out the new treatment then.

This year, with heavy boll-weevil damage, there was such a stampede for the poison and machines with which to apply it that the country's supply of these soon became exhausted or inadequate. Factories doubtless will be better supplied next season.

In the meantime the Department has developed at its Delta Laboratory, Tallulah, Louisiana, a new machine for applying the poison, and it will be on the market for the 1920 season. It will be operated by wheel traction, will cost about \$75, and will cover about 20 acres a day. Such a machine should remove a serious difficulty in practicing the new treatment. There have been only two types of dusters suitable—a hand machine, not good for more than 40 acres [CONTINUED ON PAGE 77]



The lateral view of a full-grown larva

HERE is a pure-bred stallion of the kind that will improve farm stock even if bred to grade mares. His stand cost is not prohibitive, and his get, compared to that of a poor stallion, is cheap at almost any price. One glance at him is enough to show you that he is an aristocrat. If all the stallions in this country were of his caliber, horse breeders wouldn't worry about the truck and tractor.



NOTE the difference in appearance between this old fellow and his high-born companion, the pure-bred. This is what is called a grade or scrub stallion standing at \$10. Personally we would rather take our chances on getting proportionately more of the pure-bred's get at twice, thrice, or quadruple this standing price, than to take the scrub's get at \$10.



HERE is a little fly avoider they have invented at the Crane Dairy Farm out in the Middle West. You will notice the fly protector is worked by a foot lever. When the foot is removed the protector falls into place, covering the top of the can and keeping out dust, dirt, flies, and insects. Working it with the foot saves setting the pail down, lifting the protector, then setting it on again.



WHEN one man handles two wagons hauling grain or other things, this block on the end of the tongue of the rear wagon will keep it from bumping a hole in the end gate of the front wagon. The idea is that of Mr. W. J. Hawley of Macon, Illinois.

Good Ideas

Photographs from J. C. Allen, Indiana

HERE is a removable overflow pipe in a concrete water trough so arranged that it can be unscrewed to drain the trough and clean it. The idea belongs to Ora C. Loveless, a good Indiana farmer located at Clarks Hill in the Hoosier State. It is just such simple little things as this that make farming a hard job or an easy one, says Ora. And he ought to know. He's tried it.



IF YOU'VE got a little range on your farm and want to cut down your poultry costs, you might like to use this idea. The houses are portable, and so is the fencing. When they have cleaned up one block it is not much of a job to move them to another. It is said to be a real money-saving idea, and also helps keep the chickens healthy.



FARMER Z. COX of Hamilton County, Indiana, makes good use of this old touring-car body. He has built a flat bed on it, and uses it to carry milk over his 25-mile route among the Hoosiers. He can load 64 cans on this bed and walk right along with it. If there is anything in this idea you can use, Mr. Cox and FARM AND FIRESIDE will be glad to have you take it right along.



Why I Think We Are Going to Have Better Nursery Stock

By F. F. Rockwell

A FEW months ago I explained to the readers of FARM AND FIRESIDE what the men in the fertilizer industry are doing, and plan to do in the near future, to give us better fertilizer and better fertilizer service for our money.

A somewhat similar "internal revolution" has been going on in the nursery industry. Many a farmer has had experiences in buying nursery stock which did not leave him fully satisfied with the results. I remember very vividly how, when I first began farming, a nursery agent hunted me up, thrilled me with a two-hour talk on the possibilities of fruit-growing and the wonderful specimens he had illustrated in his hectically colored "plate book," and got my order for a lot of stuff.

Most of the items were received in the fall after the ground was frozen, and could not be planted until the following spring. Some of the varieties, as I discovered three years later, were not at all suited to that section of the country. A number of the fruit trees, when they finally did bear, were not the varieties I had ordered.

One of my neighbors had done exceptionally well with McIntosh apples, but when my "McIntoshes" finally began to bear and I called in our local authority on apples to see what was wrong, he informed me that they were Ben Davis!

Then I read in a farm paper somewhere that the agent was not to be trusted anyway, and in the advertising section I noticed the "ad" of a concern which read something like this:

"Why pay agents prices when you can buy direct from the grower at wholesale? We save you one half to two thirds. Send for our catalogue."

Well, I sent, and sure enough the prices were low—so low that I could not understand how trees could possibly be grown for such prices, although at that time I had never visited a nursery and had no idea of the amount of work and care and "overhead" which are required to produce first-class, carefully graded, true to variety trees.

Well, to cut a long story short, I tried again—and the result was less satisfactory than before. Among the trees when they arrived were some very large ones with which I was immensely pleased, until my friend the fruit grower informed me that they were so old and overgrown that they would not care for them at any price.

And yet this neighbor of mine was a successful fruit grower who added to his plantings almost every year. I asked him how he did it, and from our conversation I gathered that he had been through the same sort of troubles I had been having, until he adopted the plan of actually visiting several nurseries, and inspecting the stock and the methods that were used, on the grounds.

"But, before buying," he concluded, "you should realize that you cannot expect to get A No. 1 stock for the prices you have been paying. You told me once you considered any but the best seed you could buy expensive at any price; that 'the best seed was the cheapest, regardless of what it cost.' The same is true of nursery stock.

The first consideration *must* be *quality*. Only when that is absolutely assured can you afford to give any consideration to a difference in prices."

Now, of course, it is out of the question for everyone who wants to buy nursery stock to go and visit a nursery. And, of course, that is not necessary if you know of reliable concerns from which to get stock.

But there is the rub. The fact that the inexperienced buyer has had no way of telling where to go except to learn through costly and discouraging experience such as mine

buyers have insisted on getting the *cheapest* stock we could find, and then we have kicked because the cheapest did not turn out to be the best. That is true of nursery stock, of course, just as it has been true of fertilizer and other things that we have bought.

However, the more progressive nurserymen have realized for a long time that it was *their* business to educate the consumer to the fact that quality was of more importance than low price in the buying of nursery stock. And that, incidentally, brings

dle of the barrel, or fills his orders for McIntosh apple trees with Ben Davis stock or with stuff he has not grown himself and cannot be sure of, is going to make it impossible for the man who does *not* want to do these things to compete with him on a fair-for-all basis. It also means discredit to the whole dairy business, or fruit business, or nursery business in the eyes of the general public.

In addition to this, too, the good nurserymen have been up against another brand of competition which has also tended wrongly to put the emphasis on *price* rather than on *quality*—that is, the competition with foreign stock grown by cheap foreign labor. While our lawmakers, down in Washington, have seen to it that the country's "infant" industries, such as steel, cotton, and textiles, were carefully sheltered by a high and thick protective tariff, they have left the nurserymen to take care of himself.

Competition of this kind has been particularly bad for this particular business because, in the first place, in buying nursery stock one must, to a large extent, buy "sight unseen," and it may be years before the result of that purchase is discovered and there are no fixed standards to go by. Quality in trees and shrubs is not altogether a matter of caliper height and breadth.

The most progressive, honest nurserymen have realized these things for many years, but as individuals they have been helpless to correct the evils which they knew existed. And, as has been the case with almost all organizations, getting the majority to agree to some of the reform which were needed has been a long, hard job. At last, however, a substantial star has been made. The decent nurserymen who want to give their customers a square deal are organized nationally, and have the upper hand over the others now, and there is every indication that many of the old questionable practices will be eliminated.

The progressive nurserymen realize the basic truth of the principle that the seller's obligation to the buyer does not stop when the sale is made, but that with the contract of sale there goes a certain obligation of *service*, which means that the seller is morally bound to see that the customer gets satisfaction from what he has bought also, that he be shown how to use it most efficiently if it is a machine, and how to take care of it successfully if it is a plant.

With this end in view the more progressive nurserymen formed, a year ago, a voluntary national organization to carry on an educational campaign. This work was begun in a modest way during the spring and summer, and when the American Association of Nurserymen met in convention last June, they decided, in a resolution adopted almost unanimously, to take over the work of this organization, and finance it from the funds of the American Association.

This work, so far, includes the supplying of educational articles to country newspapers, the preparation of illustrated lectures for the use of granges, schools, etc., of home fruit-growing and decorative planning; the preparation of two small books on home landscaping and fruit-growing by Dr. Bailey and [CONTINUED ON PAGE 6]

A Correction

IN THE October issue of FARM AND FIRESIDE, on page 16, an article appeared under the signature of Judge Charles E. Lobdell of the Federal Farm Loan Board, entitled, "If This Law is Changed You Must Pay Higher Interest for Your Loans."

In seeking to summarize Judge Lobdell's article in the first few paragraphs, we wrote: "I do not think you farmers ought to have to pay a higher interest rate for your government loans than you pay now, which is a little less than four per cent over a long period of years."

We also referred in the first paragraph to "farm loan bonds issued by the Government." This also was incorrect, because the bonds are not issued by the Government.

Judge Lobdell stated explicitly in his article that the Farm Loan System is not a system of government loaning, and he also stated explicitly that the interest rate is $5\frac{1}{2}$ per cent.

The introduction as we wrote it was as follows:

"As the law stands now, farm loan bonds issued by the Government to raise the money with which to make loans to farmers at a low rate of interest are exempt from taxation. There is a movement afoot among certain interests to change the law so that a tax *will* be placed on these bonds. If this is done you will have to pay a higher rate of interest for your farm loan."

"I do not think these bonds ought to be taxed, because I do not think you farmers ought to have to pay a higher interest rate on your government farm loans than you pay now, which is a little less than four per cent over a long period of years. So I am going to tell briefly what the situation is and what you can do about it."

Judge Lobdell is in no way responsible for those two paragraphs. We are entirely responsible for them.

This correction was demanded by the secretary of the Farm Mortgage Bankers Association of America before he could consent to relieve Judge Lobdell of responsibility for the introductory statement.

We are glad to make this correction for Judge Lobdell. As for the Farm Mortgage Bankers Association of America, the statements which Judge Lobdell did make in the body of his article show, to our mind, that the Farm Mortgage Bankers of America are no friends of the Farm Loan Act, which has saved the farmers of this country so much money by giving them long-term loans at a low rate of interest. Before the Farm Loan Act became effective, the Farm Mortgage Bankers were getting good high interest rates from the farmers—so it is easy to see which side their bread is buttered on in this matter.

THE EDITOR.

has been proved in itself that something's been "rotten in Denmark." My case was by no means an isolated one. I doubt if there is a reader of this article who has not had, or known personally someone who has had, similar experiences.

Now, whenever a condition of this kind exists there is always a reason for it. It is not only futile, but also foolish, for the individual consumer to get up on his hind legs and howl that everybody in the business is a crook, and that he will never buy another blooming dollar's worth of fertilizer or nursery stock or automobile tires, as the case may be. And in this case I happen to know the reasons why your nursery stock and the services you got with it were not always satisfactory. So, if you will, come with me behind the scenes and see what those reasons have been.

But before we start, let me say right off that one of the reasons has been that most of us

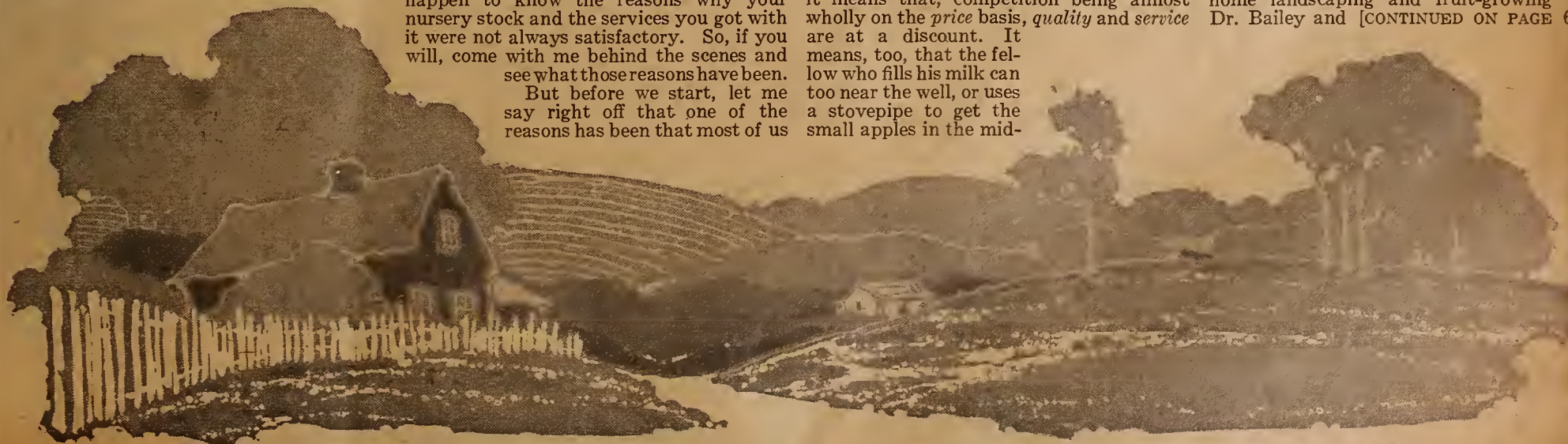
us back to the one biggest cause of nursery-stock users' troubles.

The industry has not been organized.

Organization need not mean, and in itself usually does not mean, anything like monopoly; but a total lack of organization always does mean unlimited cutthroat competition.

You dairymen and fruit growers and live-stock men who still have fresh in your memories the good old days before you had your selling organizations, do not need to be told at any great length what the result of such competition is.

It means that *the buyer sets the price*, and it means that competition being almost wholly on the *price* basis, *quality* and *service* are at a discount. It means, too, that the fellow who fills his milk can too near the well, or uses a stovepipe to get the small apples in the mid-



My Boyhood on a Middle-West Farm in the Days of Long Ago

By W. A. Beale

Illustrations by William Berger

MY EARLIEST recollection of myself is of a little boy running around an old log cabin by the Wabash River, near Logansport, Indiana. I was not more than three or four years old then. I suppose I was born in that little log cabin, as I never heard my father or mother speak of having lived elsewhere up to that time.

Another recollection that is still very real to me is of a trip in the family wagon with Father and Mother across the river to Logansport. The crossing was where the stream was wide but rather shallow, and its bottom was paved with stone, level and smooth as a floor. Father stopped the horses in midstream to allow them to drink, and, while gazing at the swiftly flowing water, the wagon and team, with us all aboard, suddenly started sideways upstream with such startling reality that I cried out in fear, thinking that we were rushing to some unknown calamity. My head was "swimming," and, to quiet me, my father told me not to look at the water but across the stream to the bank, and instantly we stopped going up-stream and the water started down again, as it should.

This incident of the wagon going up-stream impressed me greatly, and many times afterward, in crossing the river, the same phenomenon occurred, but created only a momentary thrill. Indeed, I have at times created the passing show purposefully by steadily gazing at the water for a moment to satisfy a curiosity to see myself floating up-stream.

I have no further recollection of my very young boyhood while we lived at this place on the Wabash. I do remember, though, that the landscape was somewhat low and level, and possibly subject to overflow, and this may have been the reason why Father left there for a nice little farm up in Miami County, on Big Pipe Creek, though he may not have owned this place near Logansport and wanted to get a farm of his own.

Father was of Scotch-Irish descent, and Mother was a Hollander, or Pennsylvania Dutch, as frequently called. They were strict observers of the Sabbath, and brought up their children to attend church and Sabbath school. They were hard-working people. Besides doing the usual work of the housekeeper, Mother made our jeans clothing and knit our mittens and stockings from yarn of her own spinning.

My father was a farmer, and I think a good one for those days. He gave his fields good cultivation, and used the hoe to free the corn rows from weeds. Nor did he allow weeds to fill up the fence corners.

In those early days on the Indiana farm, and even in later years, there was not the farm machinery that came after the Civil War. Nearly all industries were in their infancy or had not begun.

Corn was planted by the hand-drop method, and covered with the hoe. The dropping was usually done by a person old enough and careful enough to drop from four to five grains to a hill, the hill being the cross-section of the double-furrow system, so that the corn could be cultivated with a plow both ways. Pumpkins were grown among the corn, and when a field was to be planted to pumpkins it was usually my lot to follow the corn dropper with my bag of pumpkin seed and drop one seed in alternate hills or cross-sections.

The covering of the corn was by hoe. In this Father was somewhat particular, as he required the "man with the hoe" always to step on the hill if the ground was suitably dry. This pressed the soil firmly on the grain and insured germination.

Father sometimes had to have help in corn-planting and harvest time. Farmers usually helped each other by swapping work—that is, you help me and I'll help you. In such case he usually swapped with a near-by family in which there were two sons and two daughters. The father of this family had all the faculties, but the mother was deaf and dumb. As a fair division, one son and one daughter was also deaf and dumb, but all were equally good help in the field, and all had helped Father at different times. I am speaking now of the Pipe Creek farm.

Of course, the deaf and dumb sign language was used by this family, and their rapid use of it, accompanied by much gesticulations, was very interesting to me. By and by I learned laboriously to spell out words and talk to them with my fingers, but they talked back to me so rapidly that they never gave me time to spell out their words, much to their amusement.

I think I was just past my fifth birthday when we moved up into Miami County on to the farm I have spoken of. I do not

Something About the Author of this Story

IN SENDING us this very interesting story of his life, which we will publish in three instalments, Mr. Beale had this to say concerning himself:

"I am seventy-five years of age, born on a farm in Indiana in 1844. From that time to the breaking out of the Civil War I remained at home on the farm.

"I have written a story covering those years, which I am glad you could find suitable for the columns of FARM AND FIRESIDE. It tells of the activities of a boy on the farm in those days of sixty-five years ago, when life and farming were so different from these days; tells of his labors, schooling, sports, frolics, and many things seemingly of interest now."

Mr. Beale at present is living in Caldwell, Idaho, having moved there recently from his old home in Clinton, Iowa. THE EDITOR.

remember any incident of the journey, but have a dim recollection of our arrival at the new home. It was just like so many country places of those days, or now, for that matter—not so good as some and better than others. There was a never-failing spring of excellent water, but it was perhaps a hundred yards from the house, in a little ravine, and surrounded by beech and oak trees. As laborious as it was to carry water from this spring for all household purposes, it continued as the source of supply for many months, until Father was able to have a well put down in the immediate dooryard. I remember even yet the familiar figure of my mother carrying heavy pails of water along this spring trail, and I doubt not her patience was many times well nigh exhausted by the burden. My older brother and myself, with frequent rests on the way, often made these water-carrying trips for her. The white man was formerly, and many of them are yet, much like the Indian. He allowed the women and children to procure and carry the wood and water that supplied the household ne-



I think we captured two of the coons, the others getting up other big trees where we could not get at them

cessities. But the men, too, had their burdens. Like my parents, many of them were poor. They started in life with bare necessities, and were not able to supply the things that could make life easier for their women and children, and themselves as well, and all alike slaved for a living.

In a little one-room cabin, which was on the place when we moved there, was where I received my first schooling. It was that fall, I think, and the first week of my attendance. I had not as yet been given any books, I believe. I was evidently there at the time just to get acquainted with the schoolhouse. I had imbibed but few of the rules that pedagogues usually put forth to trip the unwary child, one of which is silence. When the class in spelling pronounced the word "windmill" I remembered the article, and that Father had such a thing at the old home, and I at once, in a very audible burst of confidence, informed the school, "We have a windmill down yonder."

I have noticed many times in the years that have followed that the desire to acquaint people with what we had, or were or did, in the place we came from, is not confined to children.

The next year, I think it was, a schoolhouse was built a short distance from this present one, but not on Father's land. It was in the woods, and our path to this new house was through a beautiful piece of timber, mostly of tall, straight young trees. I attended school at this place all the winters that we remained on this farm. My love for the woods probably grew upon or with me by reason of my surroundings. While there was much hard labor in clearing out brush and timber to make farms,

there was another view of this, in that these woods were very beautiful in spring-time, when the dogwoods, wild plums, crab apples, locusts, red and black haws, and much other shrubbery and small trees were in bloom. Then the walnuts, the ash, the white oak, the hickories, the poplars, and other trees, many growing up several rail cuts without a limb, added a stately beauty and dignity worthy of admiration.

I received a small part of my education at this little schoolhouse in the woods. Of course, it was very rudimentary, for educational facilities were not great at that time in the country school. The terms were only for the winter, and the pedagogues were not of a class holding very high-grade certificates. The teacher "boarded round." Edward Eggleston had not then written his "Hoosier Schoolmaster," but when he did, he tells us, the schoolmaster was still "boarding round."

There were no graded schools in the country districts then. The buildings were of the one-room variety, and the attendance did not justify but the one teacher. There are still many country districts where those primitive schools are duplicated.

I learned to read, write, spell, and do some ciphering, and also learned some geography. I wish now I had my old geography. All that rich prairie country beyond the Missouri to the Rocky Mountains was the "Great American Desert," represented on the map by small dots, as if the salt and pepper box had been shaken over it to represent sand, I suppose—a region afterward called the "Great Plains" by teamsters and freighters who carried goods from Missouri River points to the mines of the Rockies, a region that is now covered with cities and towns, grain farms and stock ranches. [CONTINUED ON PAGE 70]



I think my mother spun enough yarn to have worn a path in the floor

How You Can Make Sure of Better Fruit for Your Very Next Crop

By R. F. Elwell

I NEVER realized, until I tried it myself, what a tremendous difference in the quality of fruit a single season's care of neglected trees will make.

What actually can be done with an orchard, even after it has been neglected for years, was first brought forcibly to my attention by a collection of apples that captured first premiums by the dozen at a number of the fairs in my vicinity. All of this fruit had been grown in an old orchard that had been practically abandoned for years, and had been under treatment only two seasons. The results which the owner of this orchard had achieved, even in the first year, was almost unbelievable.

Most home orchards are not kept in A1 shape, not because the owners do not know in a general way that pruning and spraying will give better fruit. There has been so much written in the farm press, and so much said at extension lecture courses and Grange meetings, that the farmer who does not know in a general way that orchard care pays for itself in the improved quality of fruit is indeed a back number.

But there are still a good many who think that it will take several years to get these results. And in the second place they have never actually done the work.

"Courage is mostly a matter of having done the thing before," as Emerson said. So spraying and even pruning is put off and put off.

During the early spring months after the coldest weather has begun to let up, and before there is any danger of the sap beginning to flow in the trees, is an ideal time to tackle the job of putting the orchard into shape. Even if one hasn't an orchard, but only a few trees, this work is just as important.

I remember the first pruning I ever attempted. The trees had not been on speaking acquaintance with a saw in I don't know how many years, and they had never been sprayed. I had been convinced that they needed pruning, but when I finally got out into the orchard to start the work, in spite of the fact that I had been "reading up" on it, I found that I didn't know where to begin. I was afraid of spoiling the trees—merely because it was work which I had never done before. Finally I got a neighbor who grew a good deal of fruit, and knew just how this work should be done, to come in for an hour to help me get started. Then it was easy—so easy I could not help wondering how I had waited years before undertaking it.

That was in the days before we had county agents. If you haven't got a friend who grows fruit to help you get started right, call on your county agent. That's just the kind of work he will be tickled to help you with. Incidentally, most farmers don't get half the benefit they might from their county agent. The day when the county agent was looked upon as a government theorist, anxious to butt in and try experiments on your farm, has long since passed. You and I, of course, are not still maintaining that attitude.

THERE is more or less confusion caused in some articles written about pruning by the interchangeable use of the words "pruning" and "trimming." I don't know that there is any accepted standard of the exact meaning of these two words—that is, where trimming stops and where pruning begins. To say that pruning is heavy trimming, or that trimming is light pruning, will perhaps come as near explaining the meaning of these two words as they are generally used as any other definition.

Trees that have been cared for regularly will require little or no pruning, as the annual trimming will keep them in shape. Trees that have been neglected for several years will require a considerable amount of pruning.

The first step is to procure a suitable saw. There are many good pruning saws made. Some of these are double-edged, but this type I have never cared for personally. Especially in the hands of a beginner they are apt to do damage by making cuts through the bark where one does not mean to make them. While such

wounds are not in themselves serious, they do leave an opening for the entrance of disease spores. Where only a few trees are to be taken care of, an ordinary small cutting-off hand saw will answer the purpose, *but have it sharp*—this, both to save yourself a lot of work and to make smooth, clean cuts.

The next step is to remove all dead wood. Where a dead limb is to be removed, cut it back clean to the main trunk.

In all pruning, whether of limbs or

tree should be *open* enough so that the sun and wind have free access to all parts of it when it is in full foliage. Old apple trees which have been allowed to grow into "standing brush heaps" never produce good fruit. The least desirable of such limbs as cross each other or grow in a tangle should be cut out. Every limb or branch of any size should have its own right of way.

Most varieties of apples have a tendency to grow too tall for convenience in spraying and gathering the fruit. It is an easy matter to keep them within bounds when the work is done each year from the start. If they have been let go, however, it may require a good deal of work to get them back near the ground. This can be done in most cases by merely cutting out the topmost branches back to the limbs which tend to grow out laterally or grow downward, so that the general outline of the tree is low and rounding.

In the first orchard of my own, referred to above, the trees which presented the most serious problem were those which had grown so tall that even this treatment could not be employed. This



Last December Mr. Elwell brought to our office the six apples shown in this picture. These Baldwins were raised in Mr. Elwell's orchard, and are from trees of exactly the same age. The apples in Miss Lillian Breese's right hand came from trees that were pruned, sprayed, and fertilized, and they weighed 26½ ounces. The apples in her left hand tipped the scales to but 13½ ounces, and the trees which produced them had been neglected. Mr. Elwell knows from experience that it pays to care for your orchard.

branches, *never leave a stub*. Where a clean cut is made flush with the trunk or the parent limb, it will begin to heal over quickly. Where a stub is left, the bark will not heal over the cut surface, but will leave the wood exposed. This in time will rot and decay, leaving a cavity where water will collect and where both insects and diseases will find ideal conditions for getting in their bad work.

Having cleaned out the dead wood, the next thing to tackle are any branches that show signs of disease. Where this has become serious enough to affect the whole limb or branch, it should be cut back to a safe distance beyond the point of injury. In some cases the canker or blight will be found in spots on the large limbs. These spots may be cut out back to healthy live bark with a sharp knife. They may be prevented from spreading farther by painting these wounds with an extra strong solution of scalecide, at about double the strength employed for regular spraying.

In trees that have been neglected for several years, a good many "suckers" or "water sprouts" will have sprung up from the larger limbs, especially from the lower ones. These should be removed, except where it may be desirable, here and there, to keep one to improve the general form or framework of the tree, especially where the tree has been allowed to grow too tall and it is desirable to change it to a lower, more spreading form that can be taken care of more readily than a tall tree.

The surplus growth is the next thing to tackle. Most trees that have been neglected, especially if they are growing in a fairly rich soil, will have made more wood than is wanted. To give the best results, a

means practically making over the tree. It can almost always successfully be done, especially with apples, but the beginner should not attempt it without getting some expert advice as to whether the cut should be made, and how much to cut back at one time. If all of the old wood is removed at once, the tree will make too much soft new growth. It usually takes from two to three years to get all the old wood cut away and the new lower-growing limbs started.

If you can get somebody who knows how this work should be done, to show you where the cuts should be made, and about how much wood to remove the first season, you can easily do the work yourself.

In sawing off large limbs, great care must be taken not to strip the bark below the cut. This can be done by making a fairly deep cut on the under side of the limb first, and then cutting down to meet this from the top. In the case of very large limbs it is safest to move the first season, you can easily do the work yourself.

If you will look over your trees carefully you will be likely to find, especially if you happen to be living in the more Northern States, long cracks or splits in the bark which are not conspicuous enough to be noticed unless you are looking for them. These are the results of the extremely severe weather of two winters ago. Where such cracks are found, the bark should be cut way back to firm, live tissue. Where the dead bark has separated from the wood beneath it, if allowed to remain on, decay or disease is pretty sure to set in

sooner or later. I have had occasion to point out such winter cracks to many owners of trees who had not at all suspected their presence. They appear generally on the trunks or at the base of the lower limbs, and are often quite completely concealed by the rough bark scales over them.

AFTER the job of pruning has been done, there comes the winter or dormant spray. This can be done any time up until the buds begin to swell in the spring. It should be kept in mind that summer spraying does not take the place of winter spraying. Both are necessary to have healthy trees and perfect fruit. Most folks neglect to attend to this winter spraying for the reason I have already mentioned above—that is, merely because they have never done it before. There was some excuse for dreading this task when it was necessary to prepare one's own sprays, but there are now available a number of reliable miscible oil preparations for winter spraying which require only mixing with cold water to be ready for use. If you are in doubt as to what brand to use, you can get advice from your county agent or your state experiment station. You can get from your county agent or your state experiment station the result of their experiments with various winter sprays.

The first absolutely convincing object lesson I ever had as to the advantage of winter spraying was in seeing the result on a number of pear trees growing in a neighbor's chicken yards. These trees had remained for years about the same size, and producing practically no fruit. About three fourths of them were sprayed with the material that was left over from the apple orchard, and the others were left untouched. The difference in the growth made during the following season was almost unbelievable. The reason was that the San José scale, with which they had been infested, had been sucking out their vitality to such an extent that there was just about enough left to keep them alive, and not enough to make new growth or to produce a crop of fruit.

The only secret in winter spraying is to do the job thoroughly. The winter sprays are not poisonous—they kill by contact, so it is essential to have the spray cover every square inch of surface. Do the work on a fairly warm day when there is not too much wind, and use an angle nozzle. I have found that the advantage of an angle nozzle over a straight-necked one is that a mere turn of the wrist will save taking two or three steps to one side or the other in hitting any particular spot you want to reach.

For a few trees a small hand spray, such as you use in the vegetable garden, with the special extension rod for tree-spraying that you can obtain for it, will answer the purpose, or an ordinary bucket pump will do, although it is less convenient. Where there are a number of trees, a barrel pump mounted on a wagon will of course make the work much easier. Or, if you have some neighbor who grows fruit and has a power sprayer, whom you can get to do the job for you, so much the better. Keep in mind that even if you have only a few trees, or quite a number, every dollar you spend for winter spraying will make a difference in a good many dollars in your crop of fruit next fall.

Keep in mind, too, that the results of both your pruning and spraying are going to make a very great difference in your very next crop. As I said, to get perfect fruit you need to use summer sprays as well as to spray in the winter. "What, when, and how" in connection with summer spraying will be told in these columns in a later issue.

You can begin to pave the way for perfect fruit next fall by doing your pruning and your winter spraying now.

On a Pennsylvania farm in Carbon County, proper spraying of potatoes at a cost of \$15.60 per acre added 69 bushels and 1 peck to the yield per acre, making a net profit, at \$1.50 per bushel, of \$88.25 per acre, in one short season.



A. I. Root in one of his favorite haunts—out among things that are growing

Some Facts About Mr. Root Which He Neglected to Mention

ALTHOUGH he modestly neglects to mention it, the fact is that Mr. Root, starting with nothing, has built a million-dollar business with his bees. He did it in spite of the laughter his plans caused among his fellow townsmen when he started out.

He took seriously the very advice he gives here, and learned everything that has been discovered about bees and bee-keeping anywhere in the world. After that, as he says, he went further, and studied bees at first-hand. He found out so much more about them than the world had known before that his book, "The ABC & XYZ of Bee Culture" is recognized as the finest and most complete book of its kind in the world.

Mr. Root is now eighty years old, but he goes on working and learning. He never gives up until a thing is done right. For instance, he wrote this article twice, personally dictating every word of it. We feel that this remarkable story cannot help but be an inspiration to the younger generation of to-day, whether they go into bee culture, general farming, or any other line of endeavor.

THE EDITOR.



Another picture of Mr. Root. He is always studying and learning something

The Part That Curiosity Has Played in My Success with Bees

By A. I. Root

President of the A. I. Root Company of Medina, Ohio, and the world's foremost authority on bee culture

I HAVE hesitated to write this article because it may look very much to the great outside world that I am boasting of what I have done, and God knows I have very little to boast of.

However, let me say to my friends who are reading this that my success in life, such as it is, has been largely due to the fact that whatever I have undertaken to do I have followed it up closely and let my natural curiosity about it have such full sway that before I quit I knew pretty well how far the world had progressed in that particular line.

Most of the knowledge on which I built my success came largely through a study of books and periodicals.

I think I learned to read almost alone. I got hold of the schoolbooks belonging to my brother and sisters, and read them almost from beginning to end before I was permitted to go to school. I could not go to school winters, or not very much, on account of my weak lungs.

When I was able to go to school they had a way of "spelling down," and I very soon beat the whole school. On one examination day, after I had spelled every word the teacher could hunt up, one of the school directors present complimented me by saying to the whole school:

"There is a boy who studies his spelling book."

This remark provoked a titter all over the school, because I had no spelling book at all, and never looked into one. Now, no particular credit was due me for having been able to spell correctly all my life. It was because I let my natural curiosity have its way, and I looked into things with such interest and a desire to learn that they fixed themselves in my memory indelibly, as you might almost say.

Almost as soon as I was able to read—at least able to read understandingly—I had read from beginning to end everything in the family bookcase. I do not know but I started to read the dictionary from beginning to end; but I remember quite well commencing to read the family doctor book, and when I got pretty close to the end I was delighted to find a chapter or more on electricity, and I was soon busy constructing a "galvanic battery" as they called it then.

It did not work, and after I had cried over it my good mother suggested that our family doctor might help me. He did the best he could, but that was not very much. I finally got hold of a copy of Parker's Natural Philosophy.

Just about that time we were told that a locomotive and a train of cars were to make their first appearance in Akron, Ohio, on a certain day—July 4, 1852. I was born December 9, 1839, in a little log house in the woods of Medina County, Ohio. Of course, I was wild to see the locomotive.

My father and the rest of the children were on hand when it came up to the station, but notwithstanding my curiosity, which has taught me so many good things, I was so frightened at the monster that I pulled away from my father, who was holding my hand, and ran off into the woods; and, if I remember correctly, it was all he could do to catch me and bring me back.

A LITTLE later one of the boys at the school said they were putting up poles along the road to Akron, with two wires running on top. Another boy said that the wires were to "talk through," but the rest of the boys made so much fun at the statement about "talking through a wire" that the information was snowed under.

Well, by the aid of that "philosophy book" I soon had a battery that would send intelligence through a wire. My apparatus was very simple. I drove a pin in the center of the dining table. Then I balanced a steel pen on the head of the pin. Then a wire from my battery was laid along the table just under the steel pen. By turning the rude home-made switch the steel pen would instantly swing around from pointing north to pointing east and west. I had no money at the time to buy very much wire, or I could have sent my current a mile or more as well as from one end of the room to the other.

Now, I have held up the idea that curiosity is a great factor in success in life, but let me put in a caution right here: When I began to go to Sunday-school and learned to repeat verses I soon heard words which I could not understand, and at such times I believe I always went to my mother first. May God be praised that I did so. Vividly do I remember when she said:

"Amos, you are not yet old enough for me to answer you. Please believe your mother knows best when she asks you to let that matter drop for the present, and please do not go to anybody else. Do not listen to the boys on the street, nor ask them any questions. Come to your good mother, and when the proper time arrives she will gladly tell you all she can about it."

How many mothers are there, whose eyes rest on these pages, who have done or will do substantially the same thing with their boys just turning from childhood to manhood? May God bless the mothers, and may they realize the sacred responsibility that rests upon them in making men who love righteousness and hate iniquity.

Also, you should not let your curiosity make you lopsided—that is, know a lot about one thing and nothing about anything else. You can "work up" an interest in almost anything that is worth while. For instance, when I was about twelve years of age I attended high school at Wellsville, Ohio, on the Ohio River. I went before the superintendent to have

him decide the grade where I should be placed. He asked me a lot of questions.

When it came to chemistry and natural philosophy I noticed a queer smile on his face, and then he drew me out to tell what I had been doing with both studies. After the examination he took his pencil and marked certain subjects. When I read it over I asked in surprise:

"Why, can't I study chemistry and philosophy here? I am told you have a fine laboratory and apparatus."

He smiled again and said something like this:

"My young friend, did you ever see an apple tree that had grown all over to one side, so that it began to tip over and let its roots stick up in the air?"

I replied that I had seen such trees.

"Well," said he, "you are that apple tree. We want to make you an evenly well-balanced scholar. Just let chemistry and philosophy alone for a while. They will be all right in due time. You need to give particular attention to grammar."

"But I don't like grammar."

He laughed again and said:

"That is exactly what I suspected."

He took me by the hand and led me into a room full of pupils of about my own age. A pleasant-faced woman came forward. She looked like my mother, and always reminded me of her. This beautiful bright woman put her hand out to me with a winning smile, while Superintendent Parsons said:

"Miss Udell, this young man *thinks* he does not like grammar. Will you kindly persuade him he is mistaken?"

Then she gave me a still brighter smile and said:

"I will try, and I am sure we shall be good friends, anyhow."

I was a stranger in a strange place, but she took pains to come and talk with me just a little almost every day; and, oh, how her smiles did lift me up and help me to take up important studies which I had neglected!

WHEN I was not in school, a great part of my time was spent in hunting up feed for some chickens I had. A brother-in-law who had married an older sister, and who was a writing teacher, volunteered to teach me double-entry bookkeeping to see whether the poultry business paid. I soon made a yard and a poultry house. About a quarter of a mile away was a water-power gristmill. I bought my poultry feed at that mill, and lugged it home. Of course, I was interested in every part of the machinery in the mill, and the good miller finally offered me the sweepings of the mill if I would keep it nicely swept out and brushed out from top to bottom. There was a book published just then in regard to chickens, and one day I walked eight

miles to the city of Akron to purchase a poultry book. I think it was pretty near dark when I reached home, because I sat down so many times by the side of the road to read my book. Well, one day when I was sweeping the mill I caught sight of a copy of the "Scientific American" lying on the miller's desk. The journal was then in its third or fourth year. I think I devoured about every word of it, whether I understood it or not. Finally the kind miller loaned me the back numbers, which he kept nicely bound, making a big book. The "Scientific American" attracted me perhaps more than almost anything else, because it told of the great inventions that were going on in the whole wide world. From that time to this I have been a constant reader, more or less, of the "Scientific American."

I HAVE been asked to tell something about how I happened to be attracted to beekeeping. Well, my curiosity in regard to bees at a very early age came very near being my wind-up. As soon as I could talk I showed a remarkable disposition to investigate the whys and wherefores of everything that came before my childish view.

When I was about two years old my father was planning to brimstone a hive of bees to get the honey. Now, just before this I had contracted a severe cold. The family doctor was called, and declared that I must not even so much as look outdoors until I was well over it. But my curiosity was so great that when all the rest were outside, gathered around the hive, I raised the wooden latch to the door of our one-room log house and got outside before anybody knew it.

The next thing was to tumble down and get my baby hands into the snow. A sister, older than I, picked me up and put me in a big armchair before a blazing fire in the old-fashioned fireplace. In a short time I was almost too hoarse to talk. The doctor was sent for, and a little later a council of doctors told my good mother there was no chance for my recovery after what had happened. The doctors gathered up their remedies and said there was no need of their coming back any more, as I had only a few hours to live.

I finally pulled through, however, or I should not be here writing this.

The shock I received at that time, however, was so great that I did not get over it for years, especially when winter came; and I am not sure but that what happened at that early age has something to do with the fact that I seem obliged to spend my winters in Florida during my old age.

I think I was about four years old when I was well enough to go out riding with my father. On one occasion he carried some "drawers" of honey [CONTINUED ON PAGE 81]

Shipping Poultry Together, to Honest Men, Pays Us Bigger Profits

By Victor G. Aubry

YOU know," said Fred Matthews to me one day, "these commission men and poultry buyers ain't such bad cusses as I used to think they were, and I'll bet that a lot of this trouble that shippers of farm produce have is only a misunderstanding."

"The trouble is that the farmer and the commission man don't know each other, and one mistrusts the other fellow and is always afraid that one or the other is going to slip something over, and they are trying to do each other on general principles. Why, before I began taking in the eggs and poultry to these market men from the members of the association, I thought if there was a parasite and a robber in the world it was these commission men, and I had an idea that the only way we farmers were ever going to get what was coming to us was to go right up to the city and sell direct to the consumer and put these market men out of business."

"Not only did I believe them absolutely unnecessary, but I thought the only way the commission men could possibly make a living was by trimming the farmer at every turn, and incidentally the consumer whenever they could."

"Well," continued Fred, "I've taken in eggs and stuff for the association for about three years now, and during that time this old truck and the new one have taken in hundreds of thousands of dollars' worth of stuff. I've dealt with several of the men on the market, and I find all of them to be good, straight fellows and keen business men. They are looking out for every cent, of course. But so are we. That's only human nature. I found them ready to talk business and ready to co-operate in many ways, once you know them."

"A thing which surprised me, but only seems reasonable on second thought, is that these commission men all had as wrong a conception of farmers, or at least of particular shippers, as the farmer had of him. He thought we were a lot of rubes that only half knew our business and nothing that was going on in the world, and he had an idea that we would slip most anything over on him if he gave us a chance."

"There has been a reason for this misunderstanding on both sides, and I believe it was the fact that there were, and still are, some commission men that are so crooked that they can't lay abed straight, and who make their living on what they steal from the farmers and consumers, but the blame is not all on their side. There are farmers who have got so they aren't very careful with their goods or pack, and they have the commission men suspicious of everybody who ships."

BEFORE we go any further, let's get acquainted with Fred Matthews and the association he talks about, or else some of us will begin to think that the commission men are handing him something for this.

Winter before last, when we were having so much trouble with everything we shipped because of transportation congestion and an abnormally cold and severe winter, I chanced to be over in Fred's county, which is about 70 miles from New York. They had a county poultry association which only existed because of the perseverance of Fred and his neighbor, Uncle John Cray.

The members were only half interested in the association. High feed prices and unsettled conditions were scaring them. The night I was at the meeting brought out a big bunch. At first I was a little flattered, thinking they came out to hear me; but that only lasted a few minutes, because I saw that everybody had a sort of "bone to pick," and that I had to do

something about it or else be the goat.

Well, the "bone" they had to pick was a good one. With no exception, everyone present had lost all the way from \$25 to \$500 on eggs he had shipped which were either stolen, broken, frozen, or lost somewhere in transit. I immediately saw an opening to pass the proverbial "buck," and I told them to go in a body or as a committee and see their local express agent. Fairly before I had the words out of my mouth, up jumped this agent whom I was passing the "buck" to, and told me straight from the shoulder that I was "barking up the wrong tree," and that to collect anywhere near a good percentage of these losses was impossible, that he had joined the local association, had done everything in his power to help the boys out, and that he only expected a very few of the claims to be recognized, and then only away off in the future.

What these men had lost was bad enough, but what worried them and aggravated them worse was that the future looked even worse, and the receiver of commission men at the market were getting disgusted and were cutting prices right and left.

Well, we all know that "necessity is the mother of invention," and after thinking things over a while it was decided that they would try trucking their own stuff to market. It was the worst time of the year to do this—right in the dead of one of the worst winters for years, and at a season of low egg yield. But these men were in awful straits, and by a little co-operation they could easily make up a load worth going in

Cray in the seat with him, both determined to see this thing through. About four hours later they pulled up with their load at the door of the commission house. The commission man, when he found out who these two fellows were, was not too glad to see them, because, as I have said before, he was getting quite disgusted with that crowd over there. He could not count on their stuff when he wanted it, and it was in bad shape when he did get it. Of course, he blamed it to some extent on the railroad, but, probably knowing it did no good to get sore at them, blamed the most of the trouble on the shippers.

EGGs were scarce, however, that day, and when he saw the 40 crates all at once, all in good shape, he warmed up a little, and, following that lead, Uncle John hopped on and had a heart-to-heart talk with this man. He told him what they had decided to do as an association, and that they were ready to receive any suggestions.

This commission man was just level-headed enough to see that these fellows were determined to do something, and what it would mean to him to be able to bank on a truck load of eggs of this quality at regular intervals. So he warmed up a few more degrees, and before Fred and Uncle John left they not only had a check for each shipper at high market price, net, but they also had a load of A-1 empty egg crates to replace each full one from each shipper. Good egg crates at that time were scarce at any price.

It is needless to say that even the most

after buying gas, tires, and all the "fixin's," and after paying well for the man's time for running around after the eggs and to Newark and back, the balance of the money was laid away.

How much did they lay away? Well, let it be enough to say that they bought a new truck and have money enough for another new one, and that they are hauling more eggs now than ever, and only straight express charges are paid. It will be interesting also to know that they have not lost a cent on breakage, frozen eggs, or thieves from the very start, and not a single member has complained. Also, that broilers and fowl are going over the same route as well as other farm produce, and that the shrinkage is extremely small.

Before we go back to Fred Matthews again, let's stop a few minutes to see what this co-operation in the Hunterdon County Poultry Association has meant:

First, the members are saving money on express, not only on eggs, but also on broilers, fowl, and many other farm products. Second, they have eliminated the tremendous loss on breakage and so forth.

Third, the members are saving on many supplies which they buy on the return trip.

Fourth, they are getting a large margin on high New York prices for their products, because they come in fresh, in good packages, reliable and regularly.

Fifth, and the one which Fred thinks is perhaps the most important, is that it has brought around a good business relation between the producer and the commission man, which has meant and will mean a great deal to both parties.

Sixth, and the one which I believe has meant most to these farmers, is more complete co-operation in every way—co-operation in learning from one another, in getting outside help more often as a body, in buying feed and supplies.

They buy not only grain, but also meat scrap and buttermilk in car lots at a tremendous saving. Neither of these probably would have occurred in this case had not this marketing scheme paved the way, because you will remember that the members of the association at the start were few, and those only half interested. It is needless for me to say that there is plenty of interest shown now in the association.

Fred Matthews, as president, and Uncle John Cray, as secretary, both principal pushers of this egg-marketing scheme, ought to have something further of interest to tell us. In fact, they have got so well acquainted with these commission men that the other day, when I happened in with Uncle John at

the market, he was telling this commission man how to run his business.

"The trouble in a great many cases," says Uncle John to the commission man, "is that half of you fellows don't know how to run your business. You're all right," he says, "but lots of these fellows don't get the prices for the stuff that they should, and of course they can't give the farmer what's coming to him. Of course, in that case you fellows always get yours out of it, but the farmer doesn't, and right away he thinks you are 'fimflamming' him when you are only making a legitimate profit."

"It's just like us farmers. Some of us are not so good as others. Some of you fellows know how to handle your affairs a whole lot better than others, thereby you get more money for the shippers and make more yourself. I say that a farmer is just as foolish to ship to a poor commission man as he is to keep a lot of poor, indifferent mongrel breeding stock on the farm, and lots of men don't realize it." Turning to me, Fred Matthews said:

"You have been hearing a lot about making an honest pack of fruit which you are shipping to market; [CONTINUED ON PAGE 63]



This is the truck these Hunterdon County farmers are using in which to haul their eggs to Newark and New York. Fred Matthews is here loading on Uncle John Cray's shipment, while on the extreme left is Dr. Balderson, Mayor of Lambertville, who goes around once in a while to see that everything is getting on as per Hoyle.

Not only has this truck taken in thousands of crates of eggs, but in the spring and summer extra trips are made with live broilers and fowl and not a single member has complained of the service he's getting.

with, even over the distance they had to travel.

The next day it took quite some time and running around to collect 40 cases of eggs, but that night Fred pulled up in the garage with the load. A charge equal to the express charge for the eggs was collected. This was 41 cents for a single case, and 39 cents each for two or more.

The next morning, as soon as chores were done, Matthews struck out with Uncle John



This is a part of the Hunterdon County Poultry Association who were at the Poultry Field Day at their state agricultural college. Uncle John Cray is the fellow in the center of the back row, with his coat over his arm, and Fred Matthews is the second from the right-hand side, bareheaded but wearing a broad smile.

Besides trucking their produce to market co-operatively, these fellows have learned to buy their feed in the same way. Here they are unloading a car of oats which they bought way under the local market price. Dr. Balderson is with them again. This man has realized the benefit to the community which is derived by having these men co-operate, and although he only has a few chickens in his back yard, and lives in town, he has helped these fellows work together in every way possible. The doctor is on the extreme left in the car door.

skeptical members began to become enthusiastic when Fred brought back these checks and empties. But one thing had to be worked out still, and that was how much it would be necessary to charge to come out whole on express.

The first charge was the same as the express companies were asking, and from all calculation this should cover it. Fred alternated with Uncle John and some of the other members on taking the eggs in, and

Working for It—And Making It Work

By Bruce Barton

HE TORE the curtains yesterday,
And scratched the paper on the wall;
Ma's rubbers, too, have gone astray—
She says she left them in the hall;
He tugged the tablecloth and broke
A fancy saucer and a cup;
Though Bud and I think it a joke,
Ma scolds a lot about the pup.



Photo by Clarence A. Purchase

And yet he comes and licks her hand
And sometimes climbs in to her lap,
And there, Bud lets me understand,
He very often takes his nap.
And Bud and I have learned to know
She wouldn't give the rascal up;
She's really fond of him, although
She scolds a lot about the pup.

Edgar A. Guest.

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THIS is the tale of two farmers, both of whom are dead. As a youngster I visited one of them. He and his wife were earnest folks, who worked hard every day and saved money. The world thought them honest and thrifty.

But *honest* and *thrifty* are better words than either of them deserved; *penurious* and *sordid* describe them better. Never in all my life have I entered a home where the worship of money was so constant and oppressive.

At meal time the talk was all of the cost of food, until the lettuce looked like dollar bills to me, and the butter gleamed like gold.

For money the woman denied herself every comfort and satisfaction, dying dried-up at forty-five. A little money spent for medical care would have saved the life of the son of the house, but the family debated the expenditure until it was too late, and sacrificed the boy.

So for the last twenty years of his life the old man lived alone, figuring over again the hoard that might have represented so much in happiness and growth and love.

He told me once that he had more than \$16,000 in the bank; and even then he did not understand that the \$16,000 was the price of his soul.

The other farmer left a good deal less than \$16,000 when he passed out; most of the money he might have hoarded had been invested in things more enduring than stocks or bonds.

Some of it went into the education of his children, who are the

The Pup

finest, most progressive citizens in their county to-day. Some of it went into books and into

trips, while he and his wife were still young enough to get the largest enjoyment out of the trips.

He had no slacker dollars which moth and rust corrupt; every dollar that passed through his hands had to do its maximum work in buying happiness and friendships, and family pleasure and growth. So, open-heartedly, he lived, and died as one who knew full well that life had withheld no good thing from him.

John Ruskin tells this incident:

"Lately, in the wreck of a Californian ship, one of the passengers fastened a belt about him with two hundred pounds of gold in it, with which he was found afterward at the bottom. Now, as he was sinking, had he the gold, or had the gold him?"

We are all passengers working our way on a ship that is destined in the end to sink.

Some of us work for money, some make their money work—and in the difference between those phrases lies often the difference between a successful and an unsuccessful trip.

For real wealth, as Ruskin says again, "is the possession of the valuable by the valiant." It may consist in gold and silver, or in books, or a home, or the love of little children, or the capacity to laugh.

But it is never mere money, hoarded at the sacrifice of life.

Such money no man ever owns: it owns the owner, works him pitilessly, robs him of the joys of life, and in the end destroys him.

How Zimlich and His Fellow Farmers Beat the Middleman Out

By T. C. Hart

IF ANYONE ever comes to you and suggests that a co-operative marketing organization be started in your community, get this article out and read it over again, because it tells the experience of a group of my fellow farmers in the Gulf States, and what they went up against when they organized the Gulf Coast Produce Exchange. They won, and they are now making more money, but it was a hard fight; and there may be some pointers in this story for you and your neighbors.

You will find, just as they did, that there are wheels within wheels that must be understood and carefully dealt with before a local marketing organization can be effective. You will find that the local commission men will fight you to the last ditch; and you may find that they have a stranglehold on a lot of growers through the fact that they finance them from year to year.

This story of how the Gulf States farmers finally broke the commission ring that was strangling the whole countryside and keeping its growers poor, is, I believe, a pretty accurate picture of the produce-marketing problem, and it may show you how you too can get out from under it and make more money.

"I'll bet anybody a thousand dollars I can put that outfit out of business within six months," was the boast of the "king pin" of the commission ring in a certain Southern city. The object of his bragging was the newly formed Gulf Coast Produce Exchange. No one took the bet, because the fate of other farmers' organizations had been such as to inspire a general belief that the "king pin" could make good his boast.

That section of the South had long been under the heel of this commission ring. Farmers' unions and organizations of various sorts had started up, apparently prospered for a short time, and then died away. Cars "went bad" in shipment, others reached their destination only to find a glutted market and a poor price. A few setbacks of this kind had the desired effect. They would pull away from their new organization and go back to selling their produce to the commission ring at any price the ring cared to pay.

The ring was never blamed for these disasters by the farmers. The organization "just didn't pay out," they'd say.

I have met farmers coming away from the loading platforms, and have asked them what they expected to get for their product. They would have no idea. When the returns came in and the price was poor and a ring buyer was offering a better price, they would jump from their organization in a minute and go back to the commission men. It didn't seem to enter their heads that maybe the ring could have explained why the price was down. They didn't know at that time that the ring stood ready to glut a market that the farmers' union was shipping to in order to force down the price and discredit the organization.

I have seen the price of produce drop daily on the shipping platforms as more and more produce came in, and at the same time the price in the distant markets was rising. I have seen growers sell potatoes for \$1, 90 cents, 80 cents, and 60 cents per bushel on four successive days, and then get an offer of \$2.50 per bushel for a car lot from a city hundreds of miles away.

One of the great advocates of this new produce exchange was Aubry Boyles, a lawyer of Mobile and the operator of a 40-acre farm at Tacon, Alabama. He was assisted by Charles Anderson of Axis, Alabama, Andrew Zimlich, of Tacon, and A. J. Harkins of Fowl River, Alabama.

The idea of a general produce exchange met with instant favor among the farmers and truck growers who were united in the opinion that farming under the domination of the "Big Six," as the commission ring was called, had ceased to pay.

At the meeting of the organization thirty-two shipping stations were represented, and the new exchange soon had a membership of over five hundred growers. The ring looked at this new farmers' movement with contempt. But when the exchange, after feeling its way for a time, handled over \$100,000 worth of produce in a single shipping season the ring woke up.

The exchange had handled in car ship-

ments, and charged the growers five per cent for it. Prices had been far better than had ever been obtained from the ring.

The produce exchange found that the battle was not entirely fought at home—they found that commission men in other cities were friends of their enemies. Cars went bad, markets were glutted, prices went down, and when these things began to pile up the farmers began to desert the exchange.

One of the features of the exchange had been a store located in a central part of the largest city in their district, where the people of the city were offered produce at a fair price, and where it was hoped the farmer would bring his produce. But in the operation of this store was proved the fact that the farmers were afraid of co-operation. They had been beaten at it so

members went to their banks and borrowed money on their own personal notes, and used that money to forward the business of the exchange. Boyles, Anderson, and Zimlich were ready to ride half the night to help preach the doctrine of organization to the farmers, and to try to hold them together.

The only shipping station left was Tacon, and that was kept going by Boyles and Zimlich. Zimlich had fought the commission ring for seventeen years, and had won out. He shipped car lots of his own under an honest brand, and his goods made a reputation that sold them in spite of the ring. He held the fragments of the exchange together.

Up to the time the outlet of the car-lot shipments had been through commission men in various cities, but the exchange members, knowing that didn't work, sent a

Further investigation disclosed the fact that someone was handing over to the "king pin" copies of all the exchange telegrams.

The reason one big grocery house was against the exchange was that its chief director was a stockholder and director of a bank that was financing the "king pin" of the ring.

The reason a certain hardware store always tried to explain to farmers that the produce exchange was a false alarm was that when the ring staked a farmer to any tools they were purchased at this store, and so it went.

At this time the officers of the produce exchange began an investigation of the various large brokerage concerns which have agencies in all the large cities, and here they found a solution to their problem.

They realized that to be really successful an organization must be large enough and strong enough to have branches in all the principal markets. Some such plan as the California citrus growers have is the big winner. As there was no hope of their exchange being strong enough for such action for years to come, they decided that the next best thing was to make connections with a reliable brokerage concern which did have these wide marketing facilities.

In a certain national exchange, with offices in New York, they formed such an organization. The national people sent a man down to look over the field and make arrangements for handling the exchange produce. The plan of action is this: During the shipping seasons the Northern exchange sends down an expert to handle the car-lot shipments in co-operation with Mr. Boyles, who is the secretary and manager of the produce exchange. The big exchange charges a flat rate of \$25 per car for handling the produce. The produce exchange charges its members five per cent of what their shipment brings. The big exchange, through its many agents, is always in direct touch with the needs of all markets, and it has been able to get a far greater price for the produce than was realized when the produce exchange shipped to the commission men direct.

Out of the money received from the five per cent charge to shippers the produce exchange pays the salary of the big exchange's expert, and also the \$25-per-car charge.

When the big exchange man first landed and saw the situation, one of the first things he did was to change banks for the produce exchange; and when he opened the account at the new bank he told them the reason the account was withdrawn from the other bank was because the ring had too good a record of all of the exchange's transactions. Then he went to the telegraph companies, told them bluntly that they "leaked," and that if there was any more of it they would have to answer to the United States Government. Then he got busy and handled car-lot shipments for the exchange.

He sent his cars out, and then rerouted them after they were on the way so that the ring couldn't find out where they were going in time to dump a lot of the same produce on the market and break the price.

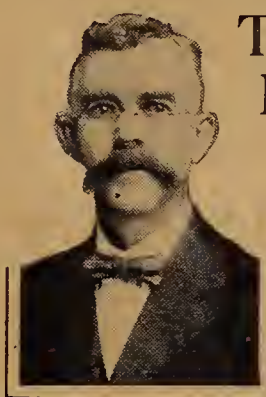
With that sort of co-operation from an up-to-date honest brokerage concern a new day dawned for the produce exchange.

The long fight was coming to a close. The produce exchange had struggled along fighting every inch of the way until they had solved the problem of how to get into the markets without dealing with the ring.

Last spring the exchange shipped 70 cars of produce. Prices were up, and in order to get the goods to fill their orders the ring had to come out in the open and buy at just as good a price as the exchange was getting for the farmers. Every single farmer benefited by the existence of the exchange.

Members who quit the produce exchange are coming back. New members are joining. The fact has dawned upon the farmers of that section that at last there is an organization which can deal with the ring.

One man who handles about \$50,000 worth of produce told the "king pin" of the ring not long ago that he was done with him after this season. "From here on I'm a produce exchange man for life," he said. and the "king pin" of the ring has himself taken to farming 100 acres in order to raise enough produce to keep his trade going.



Andrew Zimlich, the daddy of the Exchange which put these Gulf truck growers on their feet

The Average Thief Robs Nobody but Himself

THERE are still a few folks in this dear old world who think it is profitable to be a little dishonest. For their benefit it may be a good idea to point out the two shining examples in this article which prove that you can't act crooked and at the same time think straight. One was

the commission man who thought he had everything fixed so he could go on robbing the truck growers "world without end, amen." He wound up by ruining his own business. The other was the foolish grower who thought he could slip a dishonest pack in with honest ones and make a little more money. He didn't. He merely helped to kill his own struggling organization by giving its goods the reputation of being unreliable. Then he was forced to deal with the crooked commission man on the old money-losing basis.

There are no two ways about it, folks—the man who walks a crooked road is bound to get all tangled up. The straight and narrow may not be quite so inviting to look at as the primrose path, but there's more money on it if you travel it long enough.

THE EDITOR.



Aubry Boyles of Mobile, Alabama, one of the chief organizers of the Gulf Coast Produce Exchange

often. Many farmers would bring in produce, inquire the price, be told about what they could expect, and be asked to unload and come around in an hour or so for their money. But they would drive on to one of the commission houses, take 10 cents a bushel less, and drive away.

The store did not get the support that it should have had, but it did one great thing—it held up prices. Where sweet potatoes would have been sold for 40 cents a bushel if there had been no buyers by the commission ring, the price was forced up to 90 cents or \$1 a bushel.

Another spot where the exchange found itself weak was that it had no uniform system of inspection at the shipping points. The members were allowed to grade their own goods, and it was surprising to see how many farmers thought that they were benefiting themselves by putting something over on their organization. Many would bring in poor stuff, and expect the new exchange to get top prices for it.

The commission ring was quick to take advantage of all these things. With the reputation of the exchange goods injured by the growers who refused to put out a decent pack and an honest count, things looked dark for the exchange. From over five hundred, the membership dropped to fifty, and there was only one shipping station being used where thirty-two had been before.

But the end was not yet. There were a few real fighters in that exchange, and the more it looked like defeat the harder they fought. Boyles, Anderson, and Zimlich went at it harder than ever.

Finances were low, but some of the loyal

man to some of the industrial cities of Indiana to try to open up a direct outlet to the consumer. This plan worked well.

But this sort of outlet did not furnish a wide enough market. So they kept on the hunt for other systems of marketing.

Meantime one thing that had always puzzled the officers of the exchange was the attitude of the business men with whom they spent most of their money. Instead of being with the farmers in the new move, the great majority of the business interests had been lukewarm or openly antagonistic.

Some other startling things were revealed by investigations.

About 80 per cent of the farmers of the territory were heavily in debt to the "king pin" of the ring or some of its members.

In that county a great amount of commercial fertilizer is used, and a farmer has to buy his season's supply on the strength of his crop prospects. In order to get the fertilizer he has to have someone with money to back him, and here is where the ring got in its work. It would stand good for a farmers' fertilizer if he would sell the ring his crop. No price was set on that crop. Whatever the ring felt like paying was what the farmer got. In that way the farmers were perpetually in the debt of the commission men.

If a farmer needed machinery, the ring furnished the cash. If he needed groceries or feed for his horses or cattle, the same system held good. If he wanted money at the bank, his future crops were the stake.

The exchange also found out that the railroad employees were "tipping off" the destination of every car shipped. The ring knew where every car was going.

Why is It That One Man Succeeds Where Another One Fails?

By Joseph E. Wing

MAN is the most marvelous thing in the known universe. His body is marvelous. He is an engine, gaining marvelous energy from little fuel.

No automobile in the world develops the power from its fuel that a well-nourished, healthy man develops from his food. He has both wonderful power of body and wonderful adaptation to his place and his work.

His sight is a marvel. His touch exceeds in delicacy and range that of any other animal. His marvelous hands—each tipped with fingers, each finger having its sense and its memory, each one linked with the central, directing brain—put man apart from all other animals.

Viewed merely as an animal, then as a mechanism that can run and leap and swim and fight and sing and shout, man is a wonder. How he was created, how he was developed by evolution, or by God, as you prefer to term it, is very marvelous. Just to sit in a box seat and watch man as he plays or feeds or works in the arena below you is to wonder at him. And the outside, the machinery of his physical life, is the easiest understood, the easiest explained, even though explanation of it approaches the impossible.

But it is when you come to study the inner part of the man, the part that feels and thinks and reasons, that makes the body go, that plans things and with relentless force carries them through, driving a reluctant, shrinking, trembling body—that inner man that is so much apart from the flesh that it is usually ascribed to a different order, that inner man that is variously termed a "spirit," a "soul," an "intelligence," a "psychic consciousness," a "part of God"—when you come to study this spirit that dwells within, and that dwells within you and me and everyone of us, then indeed we find ourselves lost in wonder and despair of ever comprehending it.

What can we know of the mind of man, the spirit, the intelligence, the soul? Somewhat, no doubt. We can learn that the brain is the seat of the soul, of the memory, of the intelligence. We know that various acts of the body proceed from the different motive centers of the brain. The place in the brain that directs the muscles of the hand, that tells these fingers of mine how to press the keys of a typewriter so as to word this paper—that place is easily located. The place that directs the eye is also easily located. So of the place that controls the legs and the various organs of the body.

SO AT first it seems that the problem is simple of solution; the brain is mechanical, physical—almost do we imagine we see the solution of it all. There are brain cells, attached to the nerves; these nerves reach the body, command the body, direct the body. It is mechanical. Science can grasp it, almost! It is electrical, magnetic, galvanic; we can name the phenomena; we can almost understand them. We can cut a nerve and see the hand lie dead; we can splice it again and see it come to life and obedience.

But as we think further we find that we have accomplished little after all in the way of explanation of what man is, of how his soul lives and directs and acts. Yet let us not underestimate what we have learned; it is of interest; it is of importance, and of vital importance, too.

The thing that separates man from the other animals is his power of thought—of reflection and of belief or conviction. Not that he stands entirely alone in these powers; he is merely better at it than the other animals. The highly developed collie dog thinks, and has shame and aspirations, and conscience, only in a lesser degree than

man. What, then, is *thought*? To me it is clear that thought is the recalling of stored memories. Idle thoughts are the mere recalling of memories, without relation or orderly grouping and for no purpose. Constructive thought is the arranging of memories, the grouping of memories, the assorting of memories that are related to each other in such a way that they assist

it looks and then sees the mother face bend over—that face with love and assurance and comfort in it. Then there is imprinted in one of its brain cells a memory, and there is the beginning of thought, of feeling, of emotion; for thought, when it is made up of a *memory* that has a *feeling* linked with it, becomes an *emotion*, a feeling of love, or of dislike, or of fear or of sorrow.

touch to bring them into the whole range of other people's memories, thoughts and impressions. Then they may become very thoughtful indeed, very learned, wise, and brilliant. Witness Helen Keller, who was early made deaf and blind, and who now has a fine and charming soul and mind. Hence, what *you* accomplish is pretty much up to *you*. It depends on what you learn, and on what thoughtful use you make of that knowledge after you have obtained it. The man who progresses is the man who *thinks* about what he *learns* and *sees*.

It is merely man's mind using thought and putting facts together that result in the development of battleships and automobiles, of superior crops in the fields, of better live stock, of poems, and songs, of addresses that stir all men to their depths, of books that take hold of men's souls and lift them up to wish to be good and to long for higher and better life.

All that I can do here is to give some hint of how we think, how we combine memories into a connected sequence, how we "create," as we say, better crops, stock, machinery, and so on.

First of all, it depends on the stored memories in your mind. Without these memories your mind is a blank, no matter how well born you may be; no matter what the capacity of your brain, without memories stored there you must be a know-nothing. In truth, it is thought now that many idiots are such merely because through faulty development of the bony framework of the brain there is no room for the development of brain cells, thus no room for the storing of certain groups of memories.

WHAT, then, is *thought*? Thought is the recalling of memories, in related groups.

Why then, if this be true, do men think so differently? Ah, there is one faculty that must be taken into account: that is the faculty of *attention*, and that other faculty of *selection*. These belong to the unexplainable thing that you and we call *Me*. There are countless things coming before us all the time; we have power to fix attention on some of them and to pass over others. Yet they all leave impressions, only some will be faint and others strong.

Here is the important part played by the ego, the *Me*. A certain impression, or memory, of a thing seen, a thing heard, a thing felt, seems to this *Me* to be of importance, or of beauty, or of worth, to *Me*. Then this memory is stored away with greater care, maybe, than the ordinary fleeting impression.

I don't know that the ego has the power of choosing which brain cell the memory shall be stored in—I doubt that—but it may go again and again to gaze upon it; it may even bring that memory out of its seduction and set it up in an honored spot. And in that power resides nearly all that there is that distinguishes you from me—that and the varying degrees of physical strength, and the varying capacities of receiving these memories and impressions, and retaining them. This explains why you can do best that in which you are most interested. You remember more

of what you learn about it. And you think over your knowledge more carefully when it is about something you are interested in.

Thus in life two men walk the streets together. They have eyes alike and ears alike, brain cells that store similarly, blood corpuscles alike—to the visible sense there is no difference. And yet what different memories they are recording!

The one man has by training become an engineer. He notes the architecture of buildings along that street. He notes the framing of the [CONTINUED ON PAGE 36]



The Wood-Pile

OUT walking in the frozen swamp one gray day
I paused and said, "I will turn back from here.
No, I will go on farther—and we shall see."
The hard snow held me, save where now and then
One foot went down. The view was all in lines
Straight up and down of tall slim trees
Too much alike to mark or name a place by
So as to say for certain I was here
Or somewhere else: I was just far from home.
A small bird flew before me. He was careful
To put a tree between us when he lighted,
And say no word to tell me who he was
Who was so foolish as to think what he thought.
He thought that I was after him for a feather—
The white one in his tail; like one who takes
Everything said as personal to himself.
One flight out sideways would have undeceived him.
And then there was a pile of wood for which
I forgot him, and let his little fear
Carry him off the way I might have gone.
Without so much as wishing him good night.
He went behind it to make his last stand.
It was a cord of maple, cut and split
And piled—and measured, four by four by eight.
And not another like it could I see.
No runner tracks in this year's snow looped near it.
And it was older sure than this year's cutting,
Or even last year's, or the year's before.
The wood was gray and the bark warping off it,
And the pile somewhat sunken. Clematis
Had wound strings round and round it like a bundle.
What held it though on one side was a tree
Still growing, and on one a stake and prop,
These latter about to fall. I thought that only
Someone who lived in turning to fresh tasks
Could so forget this handiwork on which
He spent himself, the labor of his ax,
And leave it there far from a useful fireplace
To warm the frozen swamp as best it could
With the slow smokeless burning of decay.

From "North of Boston," by Robert Frost

Courtesy Henry Holt Company

each other; they explain and corroborate and strengthen each other. Such as when you think out a cheaper, or an easier, or a better way to do something on your farm.

Before there were *memories* there could be no *thought* at all. But memory came to the brain with the feeling and recording of sensation. For instance, the infant feels the warmth and softness of its mother's breast; it looks up as it nestles there, taking nourishment from that breast, feeding the insistent little stomach, catering to that first impulse of appetite, of body-building;

The poet Pope, in his "Essay on Man," said: "How can we reason but from what we *know*?" The man who has senses that reach out and take in the widest range of facts becomes the one most intelligent, most alert and eager.

Children born deaf and blind have only the touch to inform them of the outer world; memories with them are of limited range because they cannot see nor hear; they are slow, stupid, only half-developed until they find teachers with patience enough to teach them to use their sense of

What the Road Past Your Farm Means to You in Dollars and Cents

By Trell W. Yocum

THE U. S. Bureau of Public Roads a few years ago made a study of the road-building systems in eight counties in different parts of the United States. The investigators wanted to find out:

1. Which of several systems of financing county road-building was the most economical from the taxpayer's standpoint.
2. What the economic benefits (cheaper haulage costs, increased farm values, etc.) and the social benefits (increased school attendance, etc.) actually were.
3. What system of maintenance would guarantee that the newly built good roads would continue to be good roads, and in good repair.

The counties were: Spotsylvania, Dinwiddie, Lee, and Wise in Virginia; Franklin in New York; Dallas in Alabama; Manatee in Florida; Lauderdale in Mississippi. This information was collected during the years from 1910 to 1915 inclusive, the investigation being made at one-year intervals, and, as nearly as possible, exactly comparable information was obtained each year.

One of the most common faults in all eight counties was the tendency of county authorities to choose for improvement a larger mileage of roads than the funds contemplated would construct. This was especially true where a great deal of grading was involved.

It is obvious, of course, that these faulty estimates brought on a certain amount of dissatisfaction and distrust on the part of the taxpayers. These examples merely strengthen the argument that where any county contemplates extensive road construction it is always advisable to obtain the detailed advice and estimates of a competent highway engineer.

An assertion that has often been made is that from 20 to 25 per cent of the total road mileage of a county, if wisely distributed, will serve at least 80 to 85 per cent of the county. The Office of Public Roads states that the road construction in these counties seems to bear out this statement.

If there is one thing more than any other that has hurt the rapid extension of roads throughout the country, it is the tendency to neglect the maintenance of roads which have, in many cases, been built at great expense. Of the eight counties under consideration, Lauderdale County, Mississippi, and Franklin County, New York, were the two which most effectively solved the problem of maintenance, and the method used in Lauderdale County has been mentioned in the previous article. In Franklin County, the State had complete control over such work on some of the roads and an indirect control over others, thus giving to the task *efficient and skilled management*.

The types of bonds issued were the sinking-fund plan and the deferred serial plan.

Dallas County, Alabama, issued \$350,000, payable in thirty years at five per cent. If it is assumed that the sinking fund will bear three per cent interest, the total financial burden during the thirty-year period will be \$745,702. The Federal Office of Public Roads does not think this system is as economical as might have been chosen, because an equal amount of bonds at the same rate of interest, if issued under the deferred serial bond method, with the first bond payable six years from the date of issuance, and an equal amount payable each year thereafter for twenty-four years, the cost to the county at the end of thirty years would total \$665,000, or a difference, as compared with the sinking-fund method, of \$80,702.

The deferred serial method, adopted by Lee County, Virginia, had its bonds run

from the fifth year to the twenty-sixth year, and the Office of Public Roads thinks that this county is the only one among the entire eight which adopted the most economical method of handling the issue.

Wise County, Virginia, issued \$960,000 worth of five per cent bonds for thirty years, with a twenty-year redemption

increase in the selling price of tillable farm lands served by the roads has amounted to from one to three times the total cost of the improvements." [Years 1910 to 1915]

Land-value increases for Spotsylvania County range from 63 to 80 per cent, from 68 to 194 per cent in Dinwiddie County, 70 to 80 per cent in Lee County, 25 to 100 per cent in Wise County, 9 to 114 per cent in Franklin County, 50 to 100 per cent in Dallas County, and a like range in Manatee.

One of the most striking examples of the effect of road improvement upon the hauling of commodities is found in Franklin County. This man stated that the cost for hauling milk from Fort Covington to North Bangor over the old road, a distance of 15 miles, was about 20 cents per can (120 pounds), or about 22 cents per ton mile, hauling 25 cans to the load. Following the improvement of the roads, he was able to increase

the estimated cost of operating this truck is as follows:

FIRST CHARGES	
Interest	\$87.50
Insurance	85.00
Driver	500.00
Garage	50.00
\$722.50	
OPERATING CHARGES	
Depreciation	\$262.50
Gasoline	250.00
Maintenance	175.00
Tires	400.00
Oil and grease	50.00
1,137.50	
Total	\$1,860.00

From these figures it will be seen that the cost per day was \$9.30, which for 112½ ton miles per day, or 22,500 ton miles in 200 days, brings the cost per ton mile to 8¼ cents. It will be seen that this man's hauling cost has been reduced by improved roads and the automobile truck.

When the Office of Public Roads considered the eight counties in the aggregate, they estimated the gross annual saving in the hauling cost, due to the good-roads systems, afforded the rather impressive total of \$627,409 for the traveling of 3,489,652 ton miles. They found the average gross saving per ton mile for the eight counties to be 17.8 cents, this being indicated by an average rate of 33½ cents before the roads were improved as compared with 15.7 cents afterward.

There is one feature of the good-roads movement, however, that cannot be estimated in terms of dollars and cents, and that is the effect it has had on rural schools. The combined results in the eight counties under consideration show that the average school attendance before the roads were improved was 66 per cent of the enrollment compared with 76 after the roads were improved. This means that good roads were instrumental in furthering the education of ten additional children in each community. No one can place a valuation on what this will mean to those children when they reach the estate of manhood and womanhood. The improved roads also aided in lifting the standard of instruction by making easier the consolidation of little one-room schoolhouses into graded schools. Massachusetts, Ohio, and Indiana seem to have made the greatest progress along this line, and it is rather significant that in these States more than one third of the roads have been improved.

Nothing contributes so much to the R. F. D. efficiency and regularity as good roads. There are more than 42,000 R. F. D. routes, with an average length of about 24 miles, and there is no doubt in the world that the cost per mile traveled by the carriers could be greatly reduced, and some of the routes lengthened, if the roads were improved. I know of one community in Ohio served by five carriers where improved roads and automobiles enabled the post office to dispense with one of these carriers and at the same time give more efficient service.

An interesting side light that has a direct bearing on good roads I discovered last summer: The superintendent of Yellowstone National Park told me that never before had so many people visited the park driving their own cars. And he further stated that a very large percentage of that class were farmers and their families. With a tent strapped on one running board, bedding and cooking utensils on the other, they were out for a real time—and they were having it! His statement was further substantiated by the supervisors of several of the national forests [CONTINUED ON PAGE 79]



Summerfield Road 8½ miles from Selma, Dallas County, Alabama. General condition of entire road before improvement



Summerfield Road after improvement with gravel. Dallas County, Alabama

The hub-deep Blackwater Road in March, 1911, Lee County, Virginia



The Blackwater Road in May, 1913. Graded earth. Lee County, Virginia



Wise County adopted the serial method, with its serial payment beginning the sixth year and ending the twenty-fifth, the total cost would be \$1,704,000, a saving over the sinking-fund plan of \$154,269.

In one of these counties it is estimated that \$5,000 had been lost through selling the bonds before the funds actually were needed. This resulted in the payment of interest much in excess of that which was paid by the banks on cash balances.

In regard to the economic benefits which came to these eight counties under consideration, the Office of Public Roads said:

"A study of the increase in the values of farm lands in the eight counties reveals the rather interesting fact that following the improvement of the main market roads, the

load to 40 cans for a two-horse outfit on the macadam and gravel roads. This is at the rate of 12½ cents per ton mile for a 15-mile haul, assuming the cost of team and driver at that time to be \$4.50 per day.

In May, 1914, this man purchased an automobile truck costing \$1,750, and is now doing the work which formerly required three two-horse outfits. Two trips a day are made from North Bangor to Fort Covington and return, and also one trip a day to Westville, making a total of 75 miles travel per day, carrying a full load, of course, half the distance. The load consists of 50 cans of milk (120 pounds each), a total net load of three tons, or 112½ ton miles each day. For 200 working days, when the roads are not covered with snow,

The Truth About This Fool Notion That Farm Women Go Insane

By Andrew S. Wing

DOES the drudgery and monotony of farm life cause farm women to go insane? Those who are wont to preach about the uplift of farmers, the burdens of farm women, etc., have very often told us so. In fact, it has been more or less accepted by the public in general that the amount of insanity among country women was greater in proportion than in the city.

Now comes a Nebraska man with convincing proof that farm women are much healthier-minded than are city women. Facts marshaled by J. O. Rankin of the University of Nebraska College of Agriculture show that there is more than twice as much insanity among city women than among country women. From every 100,000 people in the United States rural communities send 41.4 persons to asylums, while the cities send 86, or more than twice as many. The larger the city the greater the number sent from each 100,000 population. It ranges from 70.2 in the cities of 2,500 to 10,000, up to 102.8 in the cities of 500,000 and over. These figures do not include the feeble-minded, as they constitute a separate group.

Nebraska sends a low proportion to the hospitals for the insane—37.3 per 100,000 from the cities, and 32 from the rural districts. In both city and country a larger proportion of men than women are sent to the insane asylums. Hence, farm women seem to have less insanity than any other class considered. Taking the country over, the rate for city men is 94.3, and city women 77.5; that for country men only 45.2, while country women stand lowest of all with 37.3 per 100,000.

These figures do not lend much support to the theory that farm women are driven to insanity by solitude and drudgery, but would rather seem to indicate that the fresh and restful environment of the country, plenty of exercise in the open, and close communion with Mother Nature furnish the most wholesome life for both men and women.

Pulling Together

That close competition helps rather than hinders is the belief of many farming communities that are organizing for the purpose of specializing in certain breeds of pure-bred live stock. There are certain regions of the country that one naturally turns to when seeking excellence in animal-breeding. The Hereford Belt of the Missouri River Valley is a good example. There, in a few square miles, can be found thousands of registered Herefords. I know one community near my own home that has been eminently successful with Percheron horses. That town is Delaware, Ohio. There are many such communities, where breeders find that many herds draw a greater number and a better sort of buyers than isolated breeding establishments, no matter how excellent the individuals of the lone herd. Stock buyers like to shop around, and there is more opportunity of finding something to fit the taste and pocketbook where a large number of breeders are working along the same lines.

Georgia reports that Pierce and Wilkes counties, that State, have organized Poland-China breed associations, and intend to specialize in that breed alone. Other counties will devote their entire energies to the development of other breeds.

One of the most unique and successful community breeders' associations is located in Loudoun County, Virginia. This association, instead of specializing on a single breed or class of live stock, fosters the improvement of eight breeds and classes. Guernsey and Shorthorn cattle, Percheron horses, Berkshire and Duroc-Jersey hogs, Shropshire sheep, and Rhode Island Red and Barred Rock poultry have been selected by farmers of that county to be the dominant breeds. Department of Agriculture specialists believe in this plan for the reason that it cuts down on overhead cost, and eliminates extra work which is necessary where there are a great many breed associations in a single community.

Maybe such an organization would help breach the spread between the farm and the ultimate buyer in your own community.

New Grapes for Old

It is thought that the wine-grape growers of California will be able to grow success-

you can easily put into use the things they teach. Much progress has been made along the line of popularizing the publications intended for farmers. In addition, many motion-picture films of an educational nature were released for use through the extension departments of the different States. It is estimated that more than four-million people saw these films. Some



Photo by Clarence A. Purchase

It Was None of His Business

THIS little lamb is stuck in the fence. It is doing what a good many human beings do—that is, chasing off after something that really doesn't concern it, instead of sticking to business where it belongs. If this little fellow had been content to gambol around with its companions and grow and get fat, instead of getting all excited about something on the other side of the fence, it wouldn't be all tangled up in trouble. How human a lamb can be at times!

fully long-keeping grapes on a commercial scale, thus enabling them to recover quickly from the effects of prohibition on the wine industry. The chief of the Bureau of Plant Industry reports that the culture of Ohanez and other late varieties can apparently be carried on successfully with a view to substituting for the Almeria and other types of long-keeping grapes that are now imported from Spain and other countries. Good profits for grape growers of the Pacific Coast should follow development of this industry in connection with the growing of Parariti and other currant grapes already under way.

Are You Getting Yours?

Did you get your share of Uncle Samuel's good things in 1919? He distributed last year, through the Department of Agriculture, Division of Publications, 62,218,829 bulletins and other publications about agriculture. Ninety new Farmers' Bulletins were issued, besides many other bulletins and circulars of a popular nature, and great numbers of posters, especially prepared to assist in the conservation campaigns during the war period.

A great many of these bulletins are written in a direct, understandable style so that

of the subjects are: "Vacation Days in the National Forests," "Selecting a Laying Hen," "Sheep on the Farm," "Building Wooden Ships," etc.

These bulletins can be obtained direct from the Department of Agriculture, free of charge, or at a mere nominal cost; they can also be obtained through your senator or representative. If you haven't been getting them, better write for a list. The movies can be had, too, through farmers' clubs or farm bureaus by applying to your state college of agriculture.

A Ship Without a Rudder

Are you guiding your farm business? Do you know where you are going? A farm without a business record is like a ship without a rudder, says M. R. Benedict, farm management specialist at South Dakota College of Agriculture. The farmer who does not keep records is neither in a position to plug up the leaks, nor to enlarge his business in the most profitable ways, because he doesn't know what things are profitable and what are not. On the other hand, the man who has an accurate farm record has a check upon each phase of his business, and knows what is making money and what isn't.

If you want some help in starting a sim-

ple system of farm accounts, go to your county agent, or write to your state college, or to FARM AND FIRESIDE. They will be glad to help you get a start. It takes very little time to keep farm records, and nothing pays better.

What Does Your Wife Have to Work With?

In January we printed a list of the farm conveniences which were found in a survey of a Wisconsin county. Here is another one. The University of Missouri College of Agriculture, through the home economics workers, chose 645 representative farm homes in several counties, last fall, and made a survey that was intended to show the living conditions of the average Missouri farmer. This is what the survey showed:

- 645 farms surveyed.
- 407 farms operated by owners.
- 4 miles—average distance from town.
- 5 rooms—average size of house.
- 28 homes lighted by electricity.
- 27 homes lighted by gas.
- 500 were heated by stoves.
- 461 had no indoor water supply.
- 385 women had to carry their own water from well.
- 62 had running water in the house—less than 10 per cent.
- 135 had sinks with drain.
- 397 farm homes had outdoor closets.
- 5 had indoor chemical closets.
- 14 were equipped with indoor closet with outdoor septic tank.
- 229 had no toilet accommodations at all—over one third.
- 37 homes had a bath with running water.
- 21 homes were not screened.
- 374 had linoleum on kitchen floor.
- 335 had kitchen cabinets.
- 34 had bread mixers.
- 35 had fireless cookers.
- 78 had home canning outfits.
- 17 wheel trays.
- 13 dumb waiters to cellar.
- 381 had kerosene stoves.
- 253 screened-in kitchen porches.
- 27 gasoline irons.
- 13 electric irons.
- 167 carpet sweepers.
- 100 hand vacuum cleaners.
- 5 power cleaners.
- 419 sewing machines.

Perhaps a city woman could worry along without these conveniences, but how would she like to work as these women do?—

- 85 of these women started to work at 4 A. M. in the summer.
- 56 started to work at four all winter.
- 289 began at five in summer.
- 91 started at five all winter.
- 148 were at work at six in summer.
- 270 started at six in winter.
- 20 began at seven in summer.
- 138 began at the late hour of seven in winter.
- 73 women stopped work at seven in the evening in summer.
- 258 continued to work until eight.
- 217 were still at it at nine.
- 61 did not quit until ten.
- 274 quit at seven in winter.
- 150 were through at eight.
- 91 knocked off at nine.
- 14 kept at it until ten.
- All the others are still working.

The average Missouri farm woman gets one hour a day recreation, although the survey does not show when this hour comes. 130 women did not have any time off during the day for rest or recreation.

356, or more than half, had automobiles, which probably helps explain why most of these women are happy.

Some way or other we can't help feeling a bit ashamed of these Missouri farmers who let their wives toil away from sun-up to sundown without any rest or recreation, or any modern conveniences to work with. We wonder how many of the boys, or girls, or mothers from these farm homes would live there if they really had their choice?

We may be wrong, but we believe the answer would reveal a startlingly large proportion who would choose city life. It's hard to think that farmers in other States are as thoughtless as this of their wives and children, but Missouri is usually considered a pretty progressive State. We'll leave it up to you and the Missourians to settle this point.

When I Put Quality Into My Crops I Began to Make More Money

By Eric Mickelson

IN MY farming I have thoroughly learned one rule of business, and it is this: The better goods you produce, the better price they will bring you.

This is true no matter what you are growing or making. Of course, it takes additional study, time, money, and work to put *quality* into a thing, but I have always found the public willing to pay an additional premium for that quality in addition to the increased cost of production.

I'm just an average, everyday farmer, too; so I think that if I can cash in on this quality idea—and I have—anyone anywhere can do it, whether he grows hogs, fruit, or chickens, or handles truck, dairy products, or what not.

I grow potatoes.

I had been growing potatoes for sixteen years on my farm in Marinette County, Wisconsin, just as they are grown on the average farm all over the country. I grew them the best way I knew how, but never made much money on them because I didn't know enough about them, and didn't put enough of myself into them. I got from my potatoes just what I gave to them, which was very little.

I believe the average farmer finds this true. Like myself, he grows table stuff of the average kind.

The potatoes I produced, as I say, were the best I knew how to grow. I sprinkled Paris green on the vines for bugs, hoed the weeds, and did other things to get the best results.

Now I am making much more money by growing quality stock, most of which I sell for seed stock. The production requires more time, labor, and expense, as the work must be done well. However, the return, I have found in the last four years, is ample to pay for the extra care.

Potatoes to pass the test as certified seed stock must be grown well. Specialists examine them, so the best cultural methods must be used in the growing, cultivating, and grading.

My yield is much larger since I adopted more modern and efficient methods. Last year 12 acres of Triumphs and Rural New Yorkers yielded 3,000 bushels, 1,800 of which were sold as seed stock at prices ranging from \$2.20 for the Rurals to \$2.70 and \$2.75 for the Triumphs.

In 1914, while in Milwaukee, I visited the potato show. It was there I learned of certified potatoes. I marveled at the exhibits, and asked about them. I was informed that it was a good paying business to farmers who were producing this sort of stock. I found that potato-growing under such conditions was really worth while.

I learned the prices obtained were two to three times more than I was getting for my potatoes, and that the yields were larger. I pointed out that I sprayed to kill the bugs, but was informed that spraying was not enough.

In a few hours I learned a whole lot about potato-growing from college men and practical farmers. I have good potato land, and decided to give the thing a try. I knew I could always get what I had been receiving if the stock did not pass the inspections, and the only loss would be my time, and perhaps a little money. Of course, I had to buy seed, but that would be no loss, because I could select my seed for the following year from the crop.

When I got home I told some of my neighbors about the things I had learned. The next spring a dozen of us made application for membership to the Wisconsin Potato Growers' Association, under whose auspices the certified stock is grown. We were enrolled as members, and bought some seed.

I cultivated and sprayed my potatoes as I was directed by J. G. Milward, professor of horticulture, University of Wisconsin, and secretary of the association. The potatoes passed the field inspection and the bin test, and I was issued a certificate. The prices, as I recall, were much more

It's Not How Much You Work, But How You Work, That Counts

THE Governor of Texas, on seeing the seed stock Eric Mickelson shipped to the Lone Star State, from his farm at Pembine, Wisconsin, sent a letter to Professor Milward, secretary of the association, complimenting him on the stock.

Mickelson started working in Wisconsin as a timber logger when the upper section was covered with timber. Sixteen years ago he got himself a farm, and now has a place as good as you'll find in the Corn Belt. He is the proud father of five children, and all of them are getting a good education.

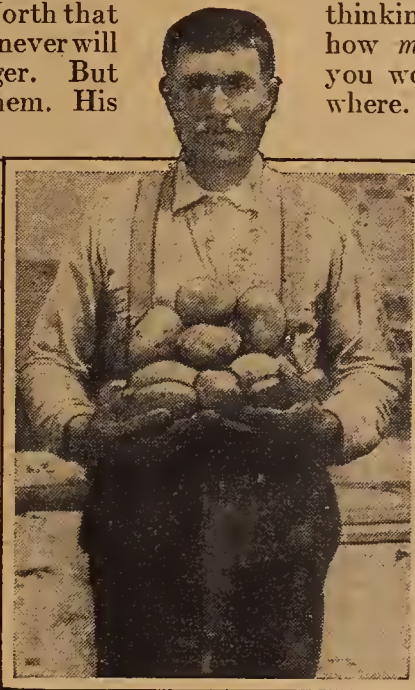
It is a saying in the North that a logger is a logger, and never will be anything but a logger. But Mickelson has fooled them. His

place is well developed and producing big crops. He has 200 acres, and is forty-six years of age.

He has made a specialty of potato-growing in the last four years, and he is known as one of the best potato men in the State. Professor Milward thinks well of his ability; and last year Mickelson took the blue ribbon for his Triumphs, they winning first prize over all competitors in a show in which the whole State competed.

It seems to us that there certainly is inspiration in the story of what he has done by hard work and hard thinking. He proves that it isn't how *much* you work, but *how* you work, that gets you somewhere.

THE EDITOR.



Eric Mickelson and an armful of his prize seed potatoes

than I had hoped to get. This started me in the business.

Last year table potatoes were selling at 90 cents to \$1.50 a hundred pounds. My spuds sold by the bushel. I figured it cost me \$125 an acre to grow, harvest, grade, and deliver my seed stock to the loading station last year. This charge also included the cost of seed, rent of land, cultivation, machinery depreciation, and everything that enters into the cost of production.

Taking box measure, my yield was 250 bushels per acre. At this rate it cost me 50 cents a bushel to grow the spuds. I can remember the time when potatoes didn't bring that price on the market. My seed stock sold easily, and I got the highest market price for the stuff which did not pass the test.

AT AN average of \$2.50 a bushel, the 1,800 bushels of seed brought \$4,500. This leaves me \$3,600 profit on the seed stock, and the sale of 900 bushels of the remaining 1,200 as table stuff leaves me a profit of better than \$4,000. And I still have potatoes for seed and my own use. The profit per acre was better than \$300.

In one year I learned enough about potato-growing to turn it from a small paying crop into the best thing on my farm.

Every potato that goes into the certified seed bin must pass not only the two inspections but also the grader. The Triumphs must pass over a 1½-inch screen, and the Rural a 1¾-inch mesh. No seed potato can weigh more than a pound, and must conform to the rules and regulations governing type. Knobby spuds must be thrown out, too.

The association inspectors watch these things, because we have a reputation all over the country, and must live up to it. It means a whole lot to me and every grower in the association. It is our reputation for quality that makes us money.

I plant my potatoes late in May or the first part of June. In planting the bulbs I take pieces having at least two eyes, and weighing about three ounces. I pay most attention to the weight of seed, but always watch that it has two or more eyes.

The land I used in potatoes is farmed under a three-year rotation. Rotation in producing maximum yields of potatoes is

as essential as in growing any other crop. Moreover, rotation enables me to combat many parasitic diseases and insects as well. These are hard to control, and rotation is the best method of doing it. Soil-borne diseases, such as scab and wilt, increase rapidly when spuds are grown continuously on the same ground.

The method I use is: Potatoes the first year, oats seeded to clover the second year, and the third year I take off the first crop of clover and plow under the second growth as green manure. I plow under this clover

in the fall, burying it six to seven inches deep. This gives it ample time to start rotting before spring. In spring I give the ground a light dressing of manure, or, if I can't do it then, I wait until the next year, when the field is put back in oats and clover again.

It has been my experience that there is no difference in the yield of potatoes, whether the manure is put on before the crop or the oats and clover are fertilized.

In spring, after the manure is put on the ground, I go over the field with a disk three or four times, if necessary. I set the blades to penetrate about six to seven inches. After this I go over the ground with a spring-tooth harrow, and it is ready for planting.

Two or three weeks before I go into the field I look over the planter to see that it is in working order, and then treat the seed with corrosive sublimate. This is done to eradicate rhizoctonia, scab, and blackleg. I find it more effective than the formaldehyde treatment, although it is not used so widely. [See note at end of article.]

This treatment is not an absolutely sure cure, but it gives me a start on the disease before planting. This jump sometimes means a whole lot. I figure it amounts to a good start in a race, although this start does not assure the runner of ultimate victory.

After I have planted the seed, I wait a week or ten days, and then go over the field with a spring-tooth harrow. In another week I repeat this process, and follow it up again when the shoots are just breaking through the ground, this time using a peg-tooth harrow.

When the vines are up, cultivation is centered on keeping down the weeds. Potatoes and weeds do not do well in the same

field, and since I am growing potatoes I keep after the weeds, going over the field three to four times. This is not a hard job, and I can clean up five to six acres a day.

Spraying is very important. Every farmer knows how bugs and disease get after potatoes. The time to spray, and the number of times to go over the vines, depends upon how thick and numerous are the bugs and disease. I generally get busy when the vines are about eight inches high, using Bordeaux mixture and Paris green. Generally I spray three to four times in the season. I figure it costs \$3 an acre for this, including materials.

Spraying is not only important to best yields, but freedom from disease is one of the important rules of the Potato Growers' Association.

The rules are not hard to comply with once a man sets his mind on producing the best. The business pays well, and it is well to give it the required attention. Lax attention means reduction in quality.

When I decided to join the association I filled out an application blank, to which I attached a check for \$5. This application blank is sent to the Horticultural Department at the University of Wisconsin.

The representatives of the college make the inspection, and the certificates are signed by H. L. Russell, dean of the College of Agriculture and director of the experiment station, and the chief inspector.

A fee is charged for inspection. When the acreage is less than one acre, no charge is made, but for fields of 1 to 25 acres the rate is \$1.25 an acre. Above 25 acres it is 50 cents. This fee must be paid before the second inspection is made, whether or not the potatoes are certified.

Two regular inspections are made, but a third one will be made if especially needed. The first inspection is made during the growing season, and the second after the crop has been harvested.

The summer or first inspection, which is in the field, involves a report of variety purity, vine disease, and general cultural conditions. The second inspection, which takes place when the potatoes are in the bin, shortly after they have been harvested, is a report of variety purity, type size, relative freedom from scab, tuber rots, and other diseases, and also includes sorting requirements.

Now, my idea in writing this article was to show you that we average, everyday folks can accomplish things just as well as anybody can, if we go at it right. And I thought maybe some folks might read this who could make use of the quality idea in whatever kind of farming they are doing.

If you do want to try it, your county agent, or your state experiment station would be "tickled to death" to have you go to them and say:

"Can you suggest any information or reading matter that I can get that will give me all the facts about the best that is being accomplished anywhere in the kind of farming I am doing?"

If they don't enthuse—though I'm sure they will—you needn't let that keep you from going on with the quality idea just the same. I did it, and it certainly paid me.

NOTE: The corrosive sublimate solution is prepared by dissolving two ounces of corrosive sublimate (bichloride of mercury) in two gallons of hot water. When the corrosive sublimate is dissolved, add cold water until you have fourteen gallons in all. Having put the potatoes in a gunny sack, place the sack in the solution and leave it there for one and one-half hours. Then empty the potatoes out upon the floor to dry before cutting and planting. If they can be left thus exposed to the light and air for a few days they will grow all the better.

If taken internally, corrosive sublimate is a violent poison, hence all animals must be kept away from the solution and the treated seed. On account of its action on metals, the solution must be prepared in wooden vessels—a barrel, for instance. See that the potatoes are clean. The vessel and all objects in contact with this poisonous solution must be destroyed or thoroughly cleaned.—THE EDITOR.

What Is a Farmer? Well, He's Not What Most Folks Think He Is

By Eugene Davenport

Dean and Director Illinois University School of Agriculture

ONLY one who has lived for at least half a century is able to realize at all adequately the significant changes that have come to farming since pioneer times, or the very different relation which agriculture is bound to sustain to all the other human interests in the days that are just ahead.

The pioneer had a very definite purpose in life, and quite distinct from ours. He was "poor as Job's turkey," but he was also "chuck-full of days' work." He was afraid of nothing but the devil and the poorhouse, so he joined the church to beat the one, and "worked from sun to sun" to avoid the other.

Plain was his life and simple was his fare. He asked but little, and was willing to work for all he got. Generous to a fault, he divided his pork and his veal between his neighbors, just as he had all along shared his venison, his bear meat, or his achievements with the finny tribe. He wanted only a roof over his head and wheat enough to "bread him through," with something for "the critters" that should be better than basswood browse.

What did it matter that wheat and wool were the only farm products that could be sold for cash in the open market? There was little need for money in those days. They did not hire, but they "changed works" day for day, and the big jobs were done by "bees." Every family carded and spun its own wool, and clothing was made in the house or paid for with pork and flour, while butter and eggs were customary if not legal tender at the store for groceries, by which were meant principally coffee, sugar, tea, and tobacco. Frequently the sugar was made upon the farm, while spice bush served for tea and dandelion for coffee.

It mattered little at first that money was scarce, because there was little use for it; but by and by, as store clothes came in and the conveniences of life began to multiply, the need for money grew, and it was a great day when pork and beef could be sold for cash. This marked the beginning of the end of homespun, and store clothes soon became the rule rather than the exception—a fact regarded by the gran'thers as evidence of the setting in of degenerate days, for durability had suffered in deference to style.

Roughly speaking, this is a fair picture of farm life in America, with local variations and differences, up to and for a little time after the Civil War. Then began a new period in development, a period that has prevailed until near the present time. It may as well be called the period of development, not only because it was during this time that the last of the continent was occupied, but also because the purpose of farming entirely changed.

The Period of Development

No longer was the prevailing purpose of the American farmer simply to get a home; it was—particularly in the earlier portion of the period, during the 70's and 80's, and even into the 90's—to get land, while yet it could be had, by hook or by crook, by swapping, by sale and purchase, or on

mortgage and by dint of the hardest kind of work—anything so that each of the boys might have a farm. This was a period of killing work for men, women, and children, availing themselves of the last chance for acreage, even though stumps and stones still cumbered the fields, even though drainage was imperfect, and some clearing yet remained to be done. This was the transition period out of pioneering and into real farming, and then it was that was laid the foundations of the yet lingering tradition that the farmer works on the eight-hour plan—one day in the forenoon and one in the afternoon. But he knew what he was about then, as he generally does, even though the onlooker might have been greatly puzzled by what he saw, and greatly grieved by the broken bodies that testified to the hardest toil ever performed in America.

Later in the period, roughly beginning with the opening of the twentieth century, when good free land became scarce and farms cost something, men began to farm for money instead of for land. Then a new light dawned, for men saw that while farming for land had been exceedingly profitable, yet farming for money with which to buy land at current prices was a kind of blind-alley job. Then came a real awakening to the fact that the world of consumers have profited enormously for fifty years because the enterprise of farming early and late for acres that cost nothing but labor had provided the world with the cheapest food it has ever seen.

The attempt to get the maximum out of the earth with the minimum of labor has been vastly helped by the phenomenal development of labor-saving machinery, and by the scientific work of the experiment stations, the results of which are getting to be common knowledge in all progressive communities. More and more the conditions are shaping in such ways as to make it inevitable that agriculture, when it shall have been finished, will be a great producing industry as truly as is a manufacturing enterprise of the highest grade—that is to say, a finished agriculture is a business.

Agriculture as a Business

Now that the farmer has objects in mind other than the mere getting of a living, and now that the acquisition of land is an expensive proposition, the farming people must not only produce vastly more than they need for their own consumption, but they must produce it economically and sell in favorable markets. If they cannot do this, the farmer cannot realize for his family what the mechanic and the merchant can secure for theirs, in which case the best men will not stay upon the land, but will go to town to better their conditions.

The thoughtless observer says, "Let them go; any man who will not leave the land is a great chump." But has the thoughtless observer considered that modern farming is a complicated and difficult as well as a laborious profession, and that if the best men will not stay with the farm then our lands cannot be worked to the best advantage and our people cannot be fed as well as they ought? Prosperous people often rail at "the farmer" for his bungling ways, and they despise him for his knotty hands, but have they considered that this is bound to be the condition of those who are left behind if city occupations are indefinitely to pay more generously than the farm for the results of labor?

Like all people undergoing a transition, the farmer is working

busily to adjust himself to what he recognizes as changing conditions, and he is succeeding fairly well, for all the brains have not yet left the farm, whatever the appearance to the casual onlooker.

The chief difficulty encountered by farmers at the present time arises from the fact that the old days of individualism are over, and the farmer is by nature and by habit intensely individualistic. Big business long ago outgrew the individual, and while the farm is bound to be a small business so far as production goes, the farmer as a business man must so associate himself with other producers as to make agriculture over into a big business so far as selling goes. This is an extremely difficult object to achieve, but it must be accomplished, and the methods must be worked out somewhat rapidly.

Food the Biggest Commodity

Of all the commodities whereby we live, food is not only the nearly fundamental, but it is also by far the greatest in magnitude. Everybody consumes it every day, and not less than a full third of all the people are required in its production.

Much of it is perishable, and much of it is transported through long distances, requiring great capital, many men, and much machinery in its distribution to the consumer. That is to say, the business of gathering up from the ends of the earth the hundreds of foodstuffs and redistributing them to the millions of individual consumers in accordance with their appetites and their pocketbooks is by its very nature, and the very conditions under which it must work, big business of the biggest kind.

The farmers stand at the beginning of the line or, rather, at the opening of the tunnel into which this stream is to be poured in order to be distributed to the millions of mouths, and the farmers must work together if the business of producing and of gathering up the supplies in the right proportions is to function properly.

How can the distributors, whom we call the dealers, gather up what is needed to satisfy demands, and leave nothing on the farm unmarketed until they and the farmers work together in determining about what the world is likely to want of each commodity? And which is better, for the distributors to hunt for what is needed, if perchance it can be found, or to know in advance what can be found and where? And which is better, that the dealer should hunt for supplies, or that the producer, who knows already where they are, should bring them in according to some prearranged plan?

In other words, because the handling of food is bound to be big business, farmers must lay aside their individualism and themselves organize, not to fight, but to do business with the world as at present organized. Until they do this the cost of gathering up, and the loss from production that does not fit the demands, will fall upon the farmer.

Organize for Business, Not for War

All this is easily said, but not so easily realized, for the farmers are many in number and diverse in their views. They are not accustomed to work together. Further, the first impulse in organization is to undo wrongs and fight for rights. This natural impulse is favored too by the un-

thinking agitator, and damage instead of progress is likely to result unless the matter is approached from the right point of view—namely, constructive business.

Failure to realize this has cost many a farmer's organization its life of usefulness, and when a thing is useless it soon dies. All over the United States we are having a new kind of farmers' organization—the farm bureaus. These can easily develop into business organizations, not so much for buying as to selling, and as they develop into state and national organizations we shall have the machinery whereby the farmers can do business with big business to the advantage of all concerned. This is the chief concern of farming in this period of reconstruction.

In the end, when the farmer has done what he can, he will expect and demand for his labor and that of his family the same rewards that come to others of equal training, equal capital, and equal service; and if the world wants to be well fed it will see that he gets it.

We are dealing now, not with ignorant peasants on American lands, but with some of the best-trained minds which the country has produced, and we have a right to expect good things without wading through bolshevism to get them.

How I Renew Strawberries

By H. F. Grinstead of Missouri

MY EXPERIENCE during a long period of years has been that not more than two really good crops can be expected from one planting of strawberries. Starting an entirely new plot or field involves considerable labor and some uncertainty. Therefore of late years I have followed a plan for renewing the old plantings without entirely destroying the new growth.

Whether we intend to or not, most of us let the runners root solidly across the space between the rows late in the summer; and if one plans to renew the old bed the following spring, this is best. After the crop has been picked I plow out the old plants, destroying all except the new ones that have rooted in the central space between the old rows. Next I take a light spike-tooth harrow and run over the ground to destroy all the weeds. Some of the remaining plants are torn out and a few covered up, but there are enough left.

One reason for the failure of old beds is that the fertility of the soil becomes exhausted. A big crop of berries draws heavily on the plant food in the soil. Plenty of barnyard manure should be plowed into the soil between the new rows, and the ground cultivated well throughout the remainder of the season. Late in the fall I mulch the rows with straw manure. This plan insures plenty of plants for the crop that follows, whereas new settings often succumb to a summer drought.

The labor by the plan described I find considerably less. However, not over one or two such renewals have proved profitable. By that time other crops will thrive better than strawberries, until the land has been rested by growing crops such as clover for a year or two.



Which Fertilizer Should You Use?

By Joe Pepper

NOW is the time of year when every farmer is thinking of supplying his fertilizer needs for the coming season, if it hasn't been done already. It isn't proper nowadays to suggest the necessity for the use of commercial fertilizer. It is so generally accepted that liberal applications are necessary, except on lands of virgin fertility, or where fertility is being put back into the soil, in the form of manure, faster than it is taken out, that we will omit discussion of that subject, interesting as it is. One of the big problems is what kind of fertilizer to use, where to buy it, and what its going to cost. Dr. Robert T. Ely, the well-known economist and author, at a meeting of the National Life Conference, held last November, expressed the belief that if an expert had control of all the land, labor, and capital available for food production he would probably cut off ten per cent of the present acreage, first of all, instead of increasing the area by settling more land.

If you can raise the same amount of crops on one acre as two acres usually produce, by fertilizing a little more heavily, it will certainly pay, for the cost of the extra fertilizer will, ordinarily, be more than counterbalanced by the saving in cost of preparing the ground, seeding, cultivating, and harvesting the crop on the extra acre. The acre saved can be used for pasture or for some other crop, and is so much clear profit.

The actual selection of a fertilizer to meet your soil needs should not be difficult. You know fairly well the original fertility of your soil. You know how long it has been cropped and how much fertility has been returned in the form of manure, straw, fertilizer, legumes, cover crops, etc. There are simple tables with which it is very easy to calculate just how much of each soil element is removed in a given yield of any crop. It will pay you to work this out, and then figure how much fertility will be returned in the form of manure, fodder, or legumes. If you want to know more about how to do this, write to FARM AND FIRESIDE.

It is a good plan to increase fertility a little every year. Your farm will then not only be producing bigger and better crops each succeeding year, but will also be growing in fertility and productiveness, which, after all, is the best way to estimate the value of a piece of land. If you are a grain farmer, it will be necessary to put back a lot of fertility every year in the form of fertilizers. If you market most of your crops on the hoof, it will take less to keep up the soil balance, but it takes some nev-

ertheless, because the animals carry away phosphorus in their bones, and nitrogen and potash, as well as phosphorus, are always lost from manure by leaching, before it gets back to the fields.

Whatever brand you buy, insist on high-grade, high-analysis fertilizer. The cost per unit of fertility is always less in the high-grade fertilizers, and the expense and trouble of handling is much less, because you have to handle less of it to get the same benefit per acre. The accompanying table, advocated by the Soil Improvement

Committee, National Fertilizer Association, gives high-analysis fertilizer for use on corn.

Commenting on this table, L. E. Call says:

"It is very difficult to issue, in a simple and concise manner, recommendations regarding the use of fertilizers for any crop. Perhaps the little circular (see table) issued by the National Fertilizer Association is as satisfactory as anything that could be issued in this simple form.

"I would not criticize the use of a small

quantity of ammonia (nitrogen) in fertilizers for corn under certain soil conditions. In fact, on some of the poorer types of soil where the supply of organic matter is low, and where barnyard manure is not used, and where leguminous crops have not been grown, a small quantity of ammonia in a fertilizer for corn would be especially beneficial. I would be more inclined to criticize the formulas from the standpoint of potash. In the first place, they mention their high potash fertilizer first. If the emphasis is to be placed either way, it should be placed on the low potash fertilizer.

"There are not many soils in the United States where one would be justified in applying as much potash on corn as the high potash fertilizer carries. In fact, I doubt if there are any soils, with the exception of peat soils, where this is the case. Their low potash fertilizers are decidedly the most satisfactory, and the high potash fertilizers probably should not be generally used, and could be recommended only for special soils."

It is generally known that most clay and clay loam soils contain enough potash to last for many years. The table can therefore be safely disregarded where it advocates the use of high potash fertilizers, except where the soil is muck or barren sand. It is also considered poor economy to buy much commercial nitrogen, or ammonia, as it is called in the table. It is cheaper and better to grow legumes such as clover and alfalfa to put the nitrogen back in the soil. Phosphorus is the one universally needed plant food. There are few soils that have been cropped a quarter of a century or more that do not crave phosphorus, and which will not repay you well for its addition. It may be that a high-grade phosphatic fertilizer, such as 16 or 18 per cent acid phosphate or basic slag, will satisfy your soil needs when supplemented with crop remains and barnyard manure.

But there is only one sure way to tell which fertilizer pays and which doesn't, and that is to have test plots of your own, on which different combinations of fertilizers are used. Check plots, where nothing is applied, can be left, and in this way a very good comparison can be had, and usually there will be enough difference to tell which is best by inspection without separate harvesting, although that of course is more accurate.

I remember we had a test on our place in Ohio that was very conclusive. Acid phosphate was applied in small plots, on a clay knoll that was in alfalfa. The alfalfa on the unfertilized part [CONTINUED ON PAGE 68]

High Analysis Fertilizers for Corn

How to make selection from the several grades

The figures represent percentages of ammonia, available phosphoric acid and potash in the order given:

	I		II	
	With Ammonia		Without Ammonia	
A—High potash.....	2-10-6		0-10-8	
	2-10-4		0-12-4	
B—Low potash.....	2-12-2		0-12-2	
	2-12-0		0-16-0	

Where manure is not used in quantity,
Where legumes are not grown, or,
If grown, are put in long rotation,
Where the growing season is short, or
The soil cold and gives a slow start,
Select from fertilizers in column I.

Where manure is used in quantity,
Where legumes are grown in short rotation, or
For green manures, or
Where the soil is of muck or peat origin,
Select from column II.

Where the soil is muck or peat, sandy or sandy loam,
Where hay and straw crops have been sold from the land,
Where manure is not used in quantity, or
Where there is difficulty in growing clover,
Select from cross-column A.

Where the soil is clay or clay loam,
Where the hay and straw crops are kept on the farm,
Where manure is carefully saved and applied, or
Where clover grows naturally,
Select from cross-column B.

EDITOR'S NOTE: This table is recommended by the Soil Improvement Committee of the National Fertilizer Association. See comment and criticism in text of article.

The Packers

[CONTINUED FROM PAGE 5]

is not quite the requisite degree of mutual confidence for really satisfactory co-operation. Besides, there is a tendency among the stockmen to look askance on any of their members who may frankly try to understand our side of the case and get our point of view. But please understand me clearly in this matter: While I am somewhat of a pessimist on the outcome of any co-operative attempt to regulate and stabilize the shipment of live stock, I am still open to suggestion and conviction, and most emphatically would welcome any scheme for accomplishing the result which both sides desire."

BUT violent fluctuations of the live-stock market are the greatest terror of the cattlemen. This problem cannot be calmly dropped on account of pessimism regarding the right method. A way must be found to stabilize prices. Otherwise the farmer cannot undertake to fatten stock for the market with any assurance that he will not lose money.

If we are to have economy we must stop waste. Unnecessary risks for the farmer spell waste, and a higher cost of food distribution means waste. Class hatred and recrimination bring waste in their train. Public ignorance on the fundamental features of farming and on the business of the handlers and distributors of food makes waste. Genuine and open co-operation of all classes alone can save the situation.

Take for consideration the one food product, beef. How can we bring together in one statement all the needful trade information on beef? Or rather, in the first place, what commercial information on beef do we really need in order that the farmer may plan his operations wisely? Well, we all—the farmer, the packer, and the consumer—want to know what it costs to produce beef in Ohio, in Iowa, in Colorado, and in Texas. We want to know the visible supply of cattle—the number of calves, yearlings, two-year-olds and older cattle. We want to know how many cattle are now ready or on the way to market, and how many cattle will be ready for market one, two, three, four or five months hence. Of course, we need similar information on pork, but just now we are considering only beef.

But this is only a part of the required information. We must know also the tendencies in meat consumption in various parts of the country, what stocks of beef are in storage, what orders have been received for foreign shipments one, two, three, or four months hence, statistics on beef cattle in all other beef-shipping countries, and the contemplated changes in shipping which might affect the movement of beef to or from the country.

At present no one has all this information, but the packers probably have more than the farmers. There is a wide-spread belief that the packers at times use their

influence to lower the prices of live stock and raise the price of beef. T. W. Tomlinson and A. E. DeRicqles of Denver, D. B. Heard of Phoenix, E. L. Burke of Omaha, and Senator Kendrick all represent livestock interests, and all believe firmly that the packers may, and sometimes do, manipulate the price of cattle at the expense of the farmer. Mr. DeRicqles thinks that the government investigation of the meat industry should be very thorough, "not with the object of putting anybody in jail or destroying anything, but simply to get the absolute facts and reliable figures and information to the end that the real conditions of affairs be brought out."

NOW, S. C. Beach, a farmer of Hutchinson, Minnesota, is authority for the statement that there are at least 600 co-operative live-stock shipping associations in Minnesota. This suggests a means of regulating the daily and weekly supply of cattle delivered at the stockyards. If similar associations are formed in all States, and if these associations enter into a national federation, they may form such a network of information centers as to enable the farmers to regulate the movements of cattle in all parts of the country, and thus guarantee a steady and uniform supply at all live-stock markets.

I had a long talk with Mr. C. W. Holman of Chicago on this point. He could see no other way by which the desired result could

be accomplished. As a matter of fact, a national organization of co-operative live-stock shipping associations was tentatively formed in Chicago in October, 1919. If this organization becomes permanent, and if each local association will keep the national headquarters informed of the number of cattle ready for shipment in their respective communities, it will be a comparatively simple matter so to direct the shipments of cattle as to relieve the pressure in beef-producing communities and prevent the flooding of stockyards and abattoirs.

This sounds like a big contract, but it is by no means impossible. The same thing is already an accomplished fact in the case of citrus fruit. The California Citrus Growers' Exchange knows each day just where, when, and how many oranges are needed, and also knows the visible supply and which members' fruit should be moved first to save storage and prevent spoilage. There is of course a similar urgency that cattle be marketed as soon as the fattening process is finished. I believe that a really efficient federation of live-stock shipping associations is a possibility. With such an organization the farmers will not need to wait for some government agency to attempt the stabilization of the cattle market.

But suppose some calamity like a wide-spread drought forces the farmers to sell their cattle sooner than they had planned. Those are times [CONTINUED ON PAGE 44]

Why I Can't Afford to Be Without Insurance on My Place

By M. G. Franklin

Illustration by Lejaren á Hiller

I WAS planting corn one day last spring, and had stopped at the end of a row to figure out how much money I would make if the field ran 100 bushels to the acre and corn sold for what it did during the war, when a stranger drove up and called me. That was my introduction to the most promising and poorest paying insurance proposition I ever ran up against.

I've been a firm believer in insurance all my life. I feel that a man can't do his best work if he doesn't sleep well at night. And he can't sleep well if he wakes up every now and then and worries for fear something might burn down or some high-priced animal might die, or he might kill a few people with his car.

Now, that policy, as that stranger outlined it, certainly sounded good to me. In the first place, it had the word "farmer" in the title, and that seemed to exclude the city insurance man, who, we have been told for years, has been waxing fat on us. In the second place, the agent said it was a mutual affair, and we all stood by one another, sharing each other's losses and dividing the profits. And that policy seemed to offer more protection than any other I ever saw.

You see, we'd been hit pretty hard, several years recently, by wind and hail. That insurance company chose a good field, it had a good agent. When he pointed out to me that this policy covered losses from wind, rain, and hail combined I could not get my name on the dotted line quick enough. The rates were reasonable: \$10 membership fee for every \$1,000 called for in the policy, and an assessment, some time in September, for the actual losses sustained by the members.

We had some pretty hard rains last spring, and I had to do considerable replanting of corn, but I never worried about the small grains. I had that insurance policy tucked away carefully in the desk drawer, and had warned Mother and the children never to take out the papers or disarrange them, so any might be lost.

The blow came, just before harvest. I had as pretty a field of oats as the sun ever shown upon. I had got the seed of a new and tested variety from the state agricultural college. I know that field would have run an unusually large number of bushels to the acre. It was rippling gold. It just seemed to put poetry in a man's heart.

Two days later we had the hardest wind and rain storm I ever saw in all my born days—grain lodged, acre after acre, and there was no way to get it up. The sun came out, afterward, so hot it steamed the fields.

ONE of my neighbors came over, a day or so later. We got our policies out and looked them over; they sure looked good after such a loss. We read the by-laws, and were glad they were written so plainly any man could understand them. Then we measured up the acreage of ruin and sent in our claim to the head offices of the company.

I'll never forget the day the adjuster came out to my place.

"Good morning, neighbor!" said he.

"It is a good morning, indeed, friend!" I replied.

"They tell me you had quite a storm here recently," he continued.

"We surely had, the worst in years."

"Must have rained pretty hard," commented the adjuster.

"It surely did," I answered.

"Blew too, didn't it?" he continued.

"It surely did," I repeated.

"Too bad, too bad," commented the adjuster. He was still for a minute, then suddenly inquired: "Did it hail?"

"No," I replied, truthfully. "We were saved that. It was the worst rain and wind storm I ever saw, but there was no hail."

"That's too bad," remarked the adjuster, closing up his book and moving away. "Too bad; otherwise you'd have a good, valid claim against us."

"What do you mean?" I asked.

"Let me call your attention to the fine print in your policy," said the adjuster. "Here it is: '... does insure the party named as the beneficiary herein against all

damages resulting from wind, rain, and hail combined.' You see, neighbor, you had the wind and rain combined, but you did not have any hail, hence your loss is not covered by this policy at all."

My first impulse was to knock him down,

My friends, this is an absolutely true story. I will give the name of the insurance company to anyone who wants to know it.

I do not want anyone to think for a minute that I lost my faith in insurance because of this transaction. A thing must



After a little preliminary conversation we walked out together to view the scene of desolation

he smirked so contentedly and superciliously. Instead, I grasped at straws, and began to argue that the policy meant rain, wind, or hail, either of the three. It was no use, though. It was there, in black and white, "wind, rain and hail combined," a weather condition that does not exist, all in combination, once in a hundred years. When it rains it seldom hails. And often it rains or hails madly, with no wind at all. And under the policy all three of these storms must occur at the same time.

be judged by its use, and not by its abuse.

The fact is, nobody is a firmer believer in insurance of all kinds than I am. I insure everything I own, from my stock and crops to my house and life. My father had the good sense to take out a policy on my life for \$2,500 when I was twenty-one, and to give it to me for a birthday present. At the time I didn't think much of it. When it matured, after twenty years, it was like getting an inheritance from a rich relative. I cashed in the policy, using it to buy some

Meat on the Fire at Ten O'Clock! What Does That Mean?

OCCASIONALLY we meet a man who says he doesn't believe in insurance. That is just his little way of saying he doesn't know what he is talking about. We all believe in insurance, whether we think so or not. Moreover, we put the belief into effect every day of our lives.

Fear of what may happen to us in the future—either near or distant—drives us all to insurance. A man buys an overcoat in the fall because he fears the cold he will encounter during the winter if he doesn't have one. That's insurance. Meat on the fire at ten o'clock is insurance against the hunger we know will come at noon.

Why do you learn a trade, profession, or business when you are young? Isn't it to insure you against your natural inability to make a living?

Why are you good, and honorable, and true? Isn't it because you want to insure yourself against the consequences of being bad? It may take a little courage to admit this, even to yourself; but isn't it true? You have learned this, perhaps unconsciously, as you came along through life. Little boys fib because they have not yet learned the importance of not fibbing. The liar, the thief, is merely the boy grown to manhood without having learned the insurance value of being honest.

Religion, morality, decency, thrift, and education are all forms of insurance against punishment, want, and suffering. We buy these forms of insurance with annual premiums of self-restraint and hard work. The insurance of our life and property we buy with money, to protect the family, the farm, the crops and the equipment we have gathered together, against death, disability, accident, or destruction which is apt to come upon us at any time in spite of all we can do to prevent it.

Insurance, then, is one of the oldest things in the world. It is fundamental. It is the ages-old human habit of preparing to-day against the consequences of to-morrow.

THE EDITOR.

machinery which made work easier and more productive. I took out another policy for the same amount (a straight-life, and not a twenty-year term), the result being that my estate is worth \$2,500 more than it was, and this \$2,500 invested on the farm is returning me more than enough money to pay the annual premiums on the new policy.

I figure that no man is rich enough to be without insurance. It is something no one of us can afford to be without. Now let's see just what kind of insurance I carry:

To begin with, I have the house, the furniture, the barn, the garage, and most of the outbuildings insured in a farmers' mutual company, the officers and directors of which I know to be honest men. There is too much danger from fire upon a farm, and too little fire protection, for any farmer to go without adequate insurance. And while the neighbors are willing to turn out and fight a blaze, there are few burning farmhouses ever saved, unless they are well equipped with fire extinguishers.

BUT the insurance companies, with their great assets, are far better prepared and able to stand the loss from a possible fire than I am. It is their business, just as farming is mine, and I've always held true to the theory that a man should know one thing well, and do it to the best of his ability, rather than to scatter his energies and succeed at none.

In the second place, I insure all my purebred stock and much of my grade. It doesn't cost much, in proportion to the loss I would suffer if they were to die.

Notwithstanding the unfortunate experience with crop insurance already set forth, I continue to carry insurance every year on my crops. I am insured in a sound, reliable company now. I made an investigation of it myself; had my local banker get their rating and report to me before I signed up.

In the next place, I carry employers' liability insurance to cover an possible accident to the men I employ on my farm. Many a hand and foot has been lost in farm machinery; many a leg has been broken in a fall from a haymow. I am protected against these things by my insurance. Moreover, I carry automobile insurance of various kinds: Fire, theft, property damage, casualty, though I am a careful driver. For \$30 or \$40 a year I protect myself against all possibilities of danger. Even in these days, when it seems as though everybody and his cousin has a car, there still remain enough people to sue an automobile driver for heavy damages on all sorts of pretexts.

Some folks say I'm silly to spend so much on insurance when I never expect to get any of it back. Well, let's put it in debit and credit form, like a bookkeeper's ledger, and see where we're at:

DEBIT—1. Probably \$5,000 paid out in the twenty years of my married life as premiums on the \$20,000 life insurance which I now carry, having taken out new policies from year to year as I felt I could afford it.

2. Possibly \$2,500 paid out in the twenty years of my married life as premiums on fire, stock, crop, and automobile insurance.

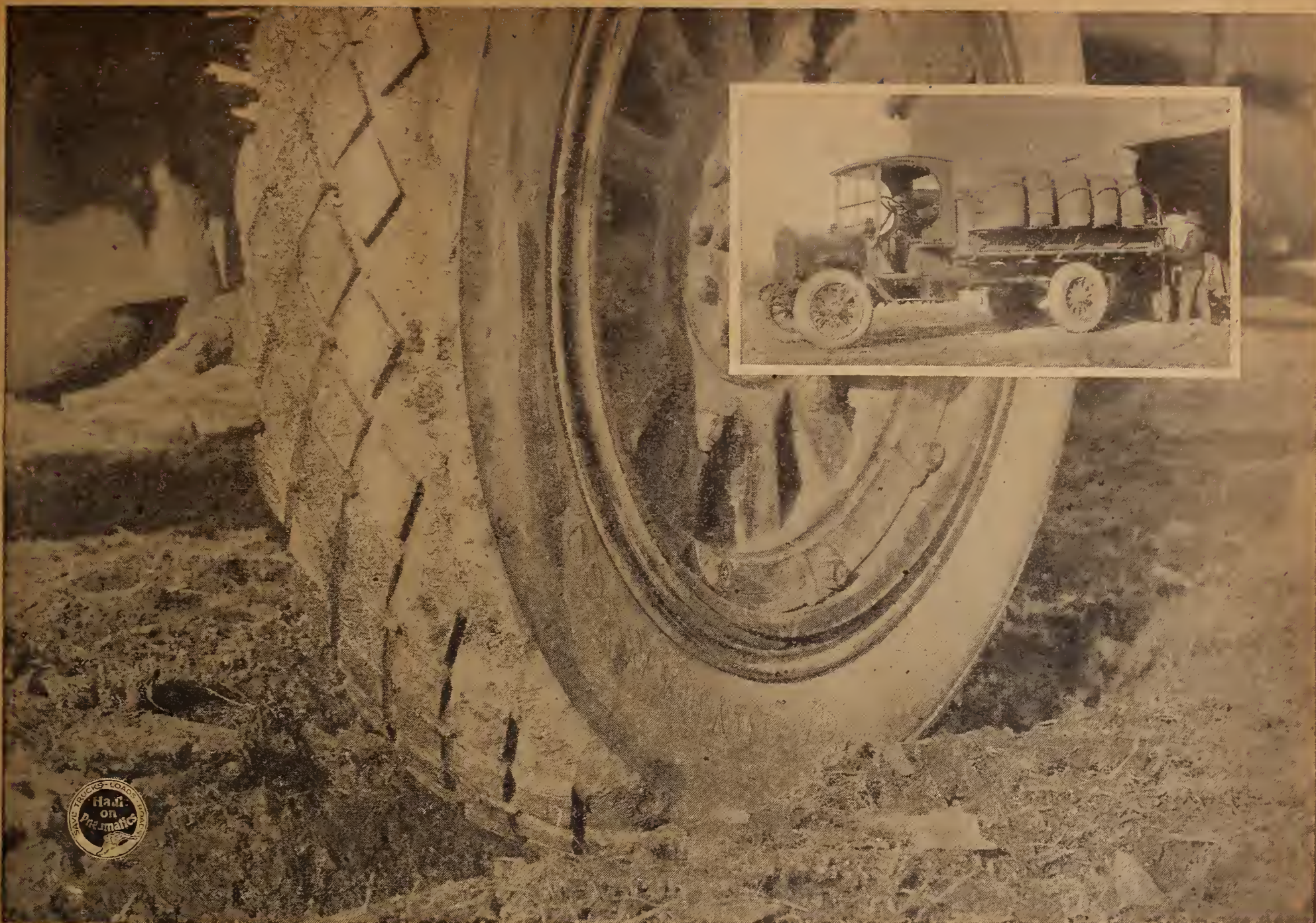
CREDIT—1. The knowledge that if I were to die my loved ones would receive \$20,000, enough to enable them to pay off the debt on the farm, all current expenses, carry on my lifework if they wished to, or sell out without having to sacrifice.

2. The knowledge that if God undid the work of my hands I could wipe the slate of a loss clean with my insurance and start all over again, without being in debt.

3. The knowledge that every chick and child in the home and on the whole place would have a roof over them, three square meals a day, and the necessities of life if I were to die unexpectedly.

4. The knowledge that my credit is doubly good at the bank and with every mercantile house, because they know I am insured against all possible loss. With this better credit comes lower interest rates.

I guess that's enough to put down, though I'm tempted to add any number more credit items. And that's why I believe in farmers having insurance.



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GOODYEAR

CORD TIRES

"How We Made Over Our House"

By William C. Smith

R. F. D. 2, Delphi, Illinois, Winner of the Second Prize

THE house we have just made over, and which only lacks a few touches here and there of being fully completed, was built more than half a century ago. It was finely located as to the barn and other out-buildings, they being in the rear and at a convenient and sanitary distance. The house stood upon an elevation, an ideal building site, possessing good drainage and a commanding view of the surrounding country.

Under the two front rooms was a good cemented cellar, 36x18 feet. There were three rooms on the ground floor in the shape of an L, the two front rooms being 15x18 feet, with a hall six feet wide between, running back to a 16x18-foot kitchen in the rear.

At the south side of the kitchen was a porch six feet wide, running the length of the kitchen. A stairway in the hall led to two upper rooms, a half-story high, situated over the two front rooms.

The exterior of the house is shown in the illustration. We had during the last two years rescued the yard surrounding this house from a wilderness of disarrangement, and had converted it into a beauty spot by the grading of the uneven surface and the construction of a fence of field stone, with a curved driveway between the yard and garden, bordered with a like fence. The yard was then set to trees and shrubbery. We only lacked a new home to complete the picture after we had beautified the yard and garden, and though our old house possessed not a single convenience or comfort, for it was cold and uncomfortable in the winter season, yet it was too good to tear down, so last May we began its reconstruction.

In my younger days I was a stone and brick mason, and possessed some skill in the planning and construction of buildings, so I set about to plan the remodeling of our home, and now detail the result, believing the reader will conclude that I made a most convenient and modern home out of an old one, yet practically saving the old almost intact.

The side porch was carefully torn away, and preserved for rebuilding in the rear of the new kitchen. Then we excavated for a cellar under this porch, the old kitchen, and the L formed by the old kitchen and one of the front rooms, and also an additional space of 12x36 feet adjoining on the rear, and built a wall of cement around the same, supporting the old kitchen with six cement pillars 18 inches square.

This new cellar was cemented on its floor, pipes being laid for drainage of laundry tubs. This new cellar, with the old one, gives ample room for our furnace, electric-light plant, compressed-water system, laundry tubs, two incubators, coal bin, vegetable-room, and space for storage of many articles.

The main part of our remodeled house is a square, 36x36 feet, the lower floor being nine feet high and the upper story eight feet high. On the rear is a one-story addition, 12x36 feet, which gives the space for the kitchen, pantry, bathroom, hall, linen closet, and washroom.

We extended the old hall back through

the old kitchen to the new addition in the rear, making it same width as the old hall. In the second story and over the hall below is a like hall of same width and length, with a window at each end, which gives fine light and ventilation.

The old stairway was torn down, and rebuilt as a rear stairway at end of main hall, the landing of same being in the hall of the new addition, leading from the kitchen past the bathroom into the washroom. And a new stairway was constructed where the old one was, the same being removed back five feet to give space for French doors between library and hallway. The inside

a double window and a door on the south, and another door on the west, leading to the outside porch.

The pantry is on the north side of the kitchen, between kitchen and bathroom, and extends to the hallway, three feet wide, leading from the northeast corner of the kitchen past the bathroom to washroom. The entrance to the bathroom, which is 8x8 feet, is at the side of this hall and almost opposite the end of the large hall running through the house. Two feet was cut off the pantry for a linen closet for the bathroom.

The washroom is 10x12 feet, with two

There are four large bedrooms up-stairs, entrance to which is from the hall, and in each bedroom is a large closet. At the end of the hallway at front of house is a sewing-room.

The bedrooms all have two large windows each, which, with the windows at each end of the hall, give the up-stairs the best of light and ventilation, and command fine views of the surrounding country.

None of the floors of the old house were disturbed, new flooring being added where needed.

All the material in the old house was used in the reconstruction, except the shingles, sheathing, lath, and weatherboarding. The weatherboarding was found to be so deteriorated that new poplar siding was used after putting on sheathing and paper. The best of the old weatherboarding was used in the rear.

All the old plastering was removed, and wall-board was used throughout the entire house, the same being paneled differently in each room, and all painted and decorated in different colors. All woodwork and paneling was painted white and enameled.

A hot-air furnace of large size, located under center of house, was installed for the burning of either soft or hard coal, wood, or coke, with a register in every room, the chimney for furnace running up through center of house and concealed in closets both up-stairs and down-stairs.

A combined electric-light plant and compressed-water system was placed in the cellar, which furnishes light and water for house and barn. It takes about an hour each day to charge batteries and fill compressed-air tank, all being done at the same operation of the engine.

The front porch is 10x36 feet, the railing and posts being constructed of field stone to match fence around the yard.

In the library is a fireplace with mantel. In the kitchen is a large sink with apron, and faucets for hot, cold, and rain water.

We have every convenience of the best city home, and we believe our home is as convenient and artistically arranged as can be made. We do not see how we could have done better had we built from the ground up. And had we built from the ground up it would have cost us not less than \$8,000.

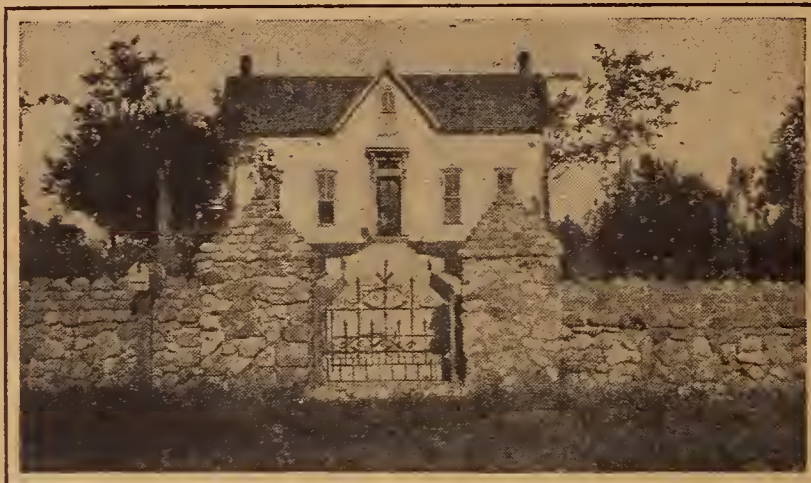
Some of the special features of our home that appeal to the women-folks are the following:

Roomy closets in each bedroom, extending upward to ceiling, with electric lights.

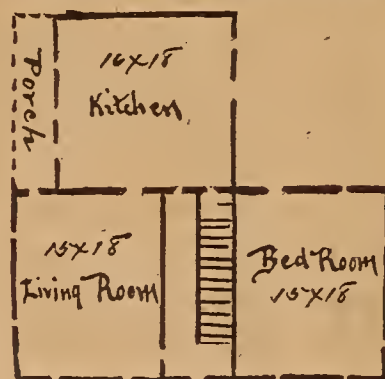
An ash pit beneath the fireplace that catches all ashes and dirt, same being removed from the cellar.

The washroom with outside entrance, where the men enter from the barn to wash, and remove their dirty shoes and clothing before entering main part of the house. This keeps much dirt, filth, and offensive odors from entering the home, and eliminates an offensive and objectionable accompaniment of most country homes.

A compressed-air system that forces water direct from [CONTINUED ON PAGE 79]



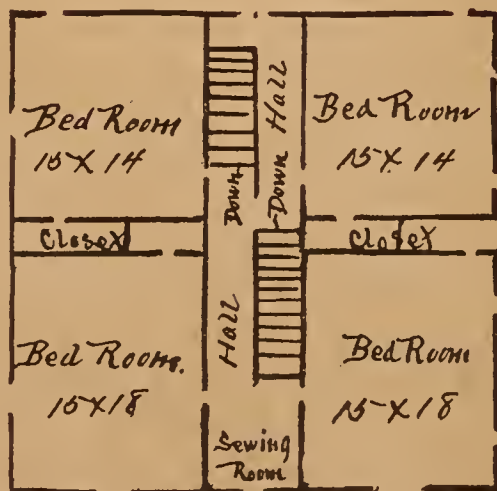
The old home before remodeling



Ground-floor plan of old house



The home as remodeled



Second-story plan of remodeled house

All the material in the old house was used in the reconstruction, except the shingles, sheathing, lath, and weatherboarding. The weatherboarding was found to be so deteriorated that new poplar siding was used after putting on sheathing and paper.

Ground-floor plan of the remodeled house



entrance to the old cellar under this stairway was not removed.

The remainder of the old kitchen, after taking off the six feet for the extension of the hall and the space given by the removal of the porch, made the new dining-room, 15x18 feet, facing to the south with a group of four windows, with window seat.

The living-room is connected with the dining-room by a 10-foot open space with columns and built-in bookcases on the sides, there being a like opening on the side of the living-room next to the hallway. And in the dining-room is a built-in buffet.

The kitchen, connected with the dining-room by a swinging door, is 12x14 feet, with

windows and an outside entrance, and is used by the men for a washroom and removal of work clothes. It also gives space for many household articles, and is found to be one of the most useful rooms of the house.

Entrance to down-stairs bedroom, inside cellar stairway, and closet under rear stairway is from the main down-stairs hallway.

It will be seen by the arrangement given that the bathroom can be most conveniently and privately reached from any portion of the house, either up stairs or down. And this room contains the average-size bathtub, a square lavatory, and closet, or seat, and has an outside window.

IT is easy to see why our belief that the Hupmobile is the best car of its class in the world, is so widely shared by others.

For example, *The Comfort Car* is held at a consistently *higher* cash value, in any used-car market.

The fact is that these valuations are basically *sound*.

They go right back to long life, noteworthy economy, satisfactory service, and conspicuous performance—the sound and substantial foundation stones on which the good name of the Hupmobile has been built.

New Books We Have Read

What Sort of a Personality Has Your House?

ALL old houses have a mysterious knack of "gathering up and incorporating the spirit of the lives that have been lived within them," says Zephine Humphrey in *THE HOMESTEAD*. (E. P. Dutton and Company, New York. \$1.90). "There is no veriest wreck of a shanty that is not obscurely eloquent of love or sorrow."

When you think of it that way, what other type of home has opportunities for building up a spirit and a personality of its own equal to those of a farmstead, whether in stern, rockbound, unyielding New England, where Miss Humphrey has located her absorbing, human tale, or in the buoyant, supremely confident Northwest, in the dreamy unresisting South, or the solid, conservative, prosperous Corn Belt? Of course there are little old houses hidden away in the forgotten, unfrequented nooks of many cities that have retained their personalities, and softly croon their tales of long-past joys and sorrows, triumphs and tragedies. But for every one of these there are hundreds of singing farmhouses, for not one but has experienced the thrills and pangs of being born of the fields and woods that surround it, of having been created out of the sweat of human brows, the strain of human muscles and sinews, the yearnings and strivings of human hearts—the hearts of its owners and builders.

Such was the Marshall homestead, which "gave the impression of having taken root with the years, until it had become an integral part of its setting," and "looking serenely down from its hillside, dreaming under its gracious elms, ruled the whole township." So, too, it tried to rule the lives and actions of its occupants, even unto the sixth and seventh generations—and it might well have succeeded had not a bigger fate and a stalwart, broad-visioned neighboring human personality stepped in and swung the current in another direction. It is this warfare that underlay and made up such a large part of the life of Barbara Marshall, before, while, and after she carried the weight of running the 100-acre farm on her own brave shoulders. That is why it is worth while for you to learn to know your home and its personality. Who knows but what you are living in the midst of no less touching and absorbing a romance than that about which *THE HOMESTEAD* tells?



Just like a couple of kids, aren't they? Probably the one with his paw up, ready to swipe the other one, has just knocked over his opponent's bowl of mush. No one ever knows exactly what it is that kids wrangle about, but it's always very exciting, and very fierce, while it lasts. And, next to kids themselves, there's nothing much "cuter," seems to us, than a couple of cub bears.

Meet Mr. and Mrs. Grizzly, and the Little Grizzlies

THE chances are that you have never become really well acquainted with the grizzly bear, "the greatest of North American wild animals." Perhaps you haven't even missed knowing him. But it's dollars to doughnuts that you'll feel differently after reading Enos A. Mills's *THE GRIZZLY* (Houghton, Mifflin Company, Boston. \$2), which constitutes not only an introduction, but also a revelation of his most intimate habits, thoughts, and marvelous intelligence. One of the interesting things about this intelligence is the large part played in it by curiosity—natural, childlike curiosity. "One Sunday afternoon," says Mr. Mills,

"one of the men in a lumber camp rigged up a canvas hammock. . . . A pet grizzly, who belonged at the camp, watched him with curious interest while he worked. She observed him with still greater interest as he stretched himself out in it and began reading. When the man deserted the hammock she walked up to it, struck it, pushed it back and forth with fore paws, and then began rather awkwardly to climb into it. She had almost succeeded, when her weight upon the edge caused it to tip over and spill her on the ground. She leaped back surprised, then walked round the hammock, eying it with great curiosity. But the second attempt at climbing into the hammock was successful, and she made a most comical and awkward sight stretched out in it flat upon her back."

Other Books Received

FOUR LITTLE PIGS THAT DIDN'T HAVE ANY MOTHER. *THE WISH FAIRY AND THE SUNSHINE FOREST*. Henry Altemus Co., Philadelphia. 50c each.

THE LONG YEARS AGO STORIES. *THE LITTLE WISE CHICKEN THAT KNEW IT ALL*. *PIFFLE'S A B C BOOK OF FUNNY ANIMALS*. Wee books of new fairy tales, with a colored picture on every page, for wee folk who read or are read to. Mostly they tell about the little animals and birds that live on or close to farms; how they got their colored feathers, or their bushy tails, or their funny habits, with the help of the "wish fairy" and others.

THE SONS OF MAINE AND OTHER POEMS, by John Chick Murray. The Four Seas Company, Boston, Massachusetts. \$1. Three score short poems on simple, homely subjects by one of those very sons, who likes to express his emotions and thoughts, whatever they may be, in rhythmic rhyming verse that is modeled on the old-time songsters, not the modern poets.

Counting in its intelligence, curiosity, bravery, endurance, reasoning powers, etc., the grizzly discloses characteristics that make it one of the most interesting of wild animals, and one which deserves a far kinder fate than the extinction that threatens it. Contrary to the general impression, the grizzly, according to Mr. Mills's many years of intimate study and experience, is never ferocious in the sense of attacking human beings. Where it has become something of a nuisance and a danger in some of the national parks, the inhabitants and visitors themselves are to blame, and the remedy consists simply of doing away with that accompaniment of careless civilization—the garbage pail—and of feeding the animals more rationally. Certainly this seems a sufficiently moderate price in comparison with the wealth of entertainment and companionship to be got out of the contemplation of the animals in their natural surroundings—not to mention the ownership of a couple of bear cubs such as Mr. Mills once brought up—with interest, amusement, and some excitement for all concerned.

Facts About Finance for Farmers and Others

A QUICK supply of elastic money easily available; under government control, secured by gold, commercial bills, and United States bonds; under an interest charge to compel contraction and prevent inflation—those are the principles upon which was based the Federal Reserve Act of 1913, which was designed to cure and prevent panics in time of national stress and financial difficulty. How its need and its operation, which has been so successful, are related to the everyday money matters of all citizens, and how the act was conceived, perfected, and made a law is told in language that anyone can grasp, by the man who made the measure, in *THE FEDERAL RESERVE ACT* by Robert L. Owen, United States Senator from Oklahoma (The Century Company, New York). Last fall the English pound sterling,

Little Robert is having an early lesson in the beauties of nature. Sister Louise is telling him about the apple blossoms, and how they grow to be apples by and by. Margaret seems more domestically inclined, and prefers making a new dress for her doll.



Wonders Near at Hand

"WE SOMETIMES travel many miles to see the marvels of nature, yet there are none more truly marvelous or more worthy of study than those at our very doors," says Zoe Meyer in her preface to *ORCHARD AND MEADOW* (Little Brown and Company, Boston. 75c), which is a

which we grew up to think of as permanently and invariably worth \$5—or, to be exact, \$4.86—of our money, fell to a record low mark of less than \$3.75. At the same time, French, German, Italian, and other European currencies were also far below their annual rates of exchange, and were consequently helping to complicate and demoralize the international trade situation. Even our own money was not immune to the epidemic of loss of value. In 1919, says Senator Owen in his second little book on finance (*FOREIGN EXCHANGE*, The Century Company, New York. 75c), "a gold dollar in New York, worth 67 cents in Spain, must have 50 per cent added to it to buy 100 cents worth of Spanish oil in Barcelona. It takes three such gold dollars in New York to be worth two gold dollars by weight in Spain." Why this condition has come about, and how it can be corrected, foreign exchange stabilized, and many related difficulties satisfactorily eliminated (partly through the workings of the Federal Reserve Bank) are discussed in this book. Nor is it essential that a man be actually engaged in the importing or exporting business in order to find the information of interest and practical value.

Does That Soil of Yours Need Lime?

MOST every farmer knows how to make the acid test of a soil with a bit of litmus paper, likewise he probably realizes that, though distinctly helpful, this is not a decisive test, and by no means indicates the soil's degree of acidity or sweetness. Consequently, considerable popularity should be the lot of the much more accurate and but slightly more complicated test devised by Professor E. Truog of the University of Wisconsin, and described by Dr. Alva Agee in his new book, *THE RIGHT USE OF LIME IN SOIL IMPROVEMENT* (Orange-Judd Co., New York. Illustrated. \$1.25).

"This test," he says, "not only detects positively the presence of soil acidity, but also gives definite information as to the degree of acidity."

To make the test, one places a measured quantity of soil in a flask, adds a solution of 20 per cent calcium chloride and 2 per cent zinc sulphide, and heats the mixture over an alcohol lamp. After it has boiled for a few minutes a piece of moistened paper which has previously been soaked in a solution of lead acetate and dried is placed over the mouth of the flask for a definite length of time. If the soil is acid, the chemical action described above turns the paper brown or black, the depth of the color depending upon the degree of acidity and, in consequence, indicating the relative amount of lime needed to counteract it.

Dr. Agee sets down in simple, direct language those things that should be known, not only as to kinds of lime, their source, and their action on the soil, but also as to methods of obtaining, handling, and applying lime for best results.

collection of short, simply told stories of birds, beasts,

and other inhabitants that make the life in the fields and dooryards so fascinating for those that have eyes to see and ears to hear. A book of nature study, with the study part left out and the arousing of the interest and curiosity of the youthful reader put in its place.

America's War Work in a Nutshell

SUCH facts as that "a soldier's outfit of clothing for a year cost \$65.51, and numbered twenty different items," that between March, 1917, and August, 1918, the American Army was supplied with—among other things—27,000,000 pairs of shoes, 29,800,000 pairs of breeches, 19,800,000 coats, 192,000,000 shirts, undershirts and drawers, 156,000,000 pairs of socks, and 21,000,000 blankets; that in ten months it used 225,000,000 pounds of sugar, and took from one season's crop 75,000,000 cans of tomatoes and 20,000,000 pounds of prunes—such facts as these, picked at random from one short chapter of *WHAT AMERICA DID*, by Florence Finch Kelly, (E. P. Dutton and Company, New York. \$2), suggest the contents and subject matter of the book. But that doesn't mean that it is simply a mass of dry, overwhelming figures and statistics, for there are many chapters of big human achievements.



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The Bravest Pigeon in the World

CAPTAIN J. L. CARNEY of Pittsburgh, Pennsylvania, is here seen holding "Cher Ami," which was cited for the Distinguished Service Cross. Throughout the bird's service on the Western front it made twelve flights, and was finally discharged when a fragment of shell carried away a part of its right leg. This mishap occurred during a flight from the front lines. When it alighted at its destination it toppled over from loss of blood. However, the message was still on the wounded leg. General Pershing on a tour of inspection asked to see the wonderful creature, and stated that the bird should be well taken care of and sent to Washington upon its return. The story of this bird is told in *THE ARMY BEHIND THE ARMY* by Major E. Alexander Powell. Charles Scribner's Sons, New York. Illustrated. \$4.

Columbia Records

Exclusive Columbia Artists—Headliners All!

Are Columbia's exclusive popular artists the real headliners?—*We'll say they are!*

Could Al Jolson sing the alphabet and make it a scream?—*We'll say he could!*

Does Nora Bayes make a musical skylark out of every song she sings?—*We'll say she does!*



Are Van and Schenck the cleverest trick singers in vaudeville today?—*We'll say they are!*

Can Bert Williams get a laugh-a-line out of any song he talks?—*We'll say he can!*

Has Harry Fox got fox-trots in his voice?—*We'll say he has!*

Does the Columbia Grafonola play these artists' records just the way they want them played?—*They say it does!*

COLUMBIA GRAPHOPHONE COMPANY, New York
Canadian Factory: Toronto

Get the New Columbia
NOVELTY Record Booklet.
Every Columbia dealer
has it.



Columbia Grafonolas—
Standard Models up to
\$300; Period Designs
up to \$2100



Do You Know—



STANDARD PRACTICE
The use of Timken Tapered Roller Bearings at points of hard service in the great majority of motor-vehicles is proof of leadership established on the tapered principle of design, quality of manufacture, performance on the road, and service to the automobile industry.



TIMKEN BEARINGS

that the motor truck has been one of the greatest factors in promoting the building of good roads?

that by proving the actual increase in farm profits due to better haulage over *poor* roads, the truck has demonstrated the great commercial advantages that *good* highways offer?

that in the development of a truck that could meet and conquer all the obstacles to motor haulage on country highways, the "power delivery mechanism" has carried a greater responsibility than any other part of the truck?

that the remarkable performance of the working parts of the modern motor truck depends largely upon the bearings installed at points of hard service?

that the tapered roller bearing—the Timken type—is the *only* type of bearing that will function properly under radial load, or thrust load, and all possible combinations of the two?

THE TIMKEN ROLLER BEARING CO.
Canton, Ohio

Timken Tapered Roller Bearings for Passenger Cars, Trucks, Tractors, Farm Implements, Machinery, and Industrial Appliances.

Six Big Points to Find Out About Before You Buy a Tractor

[CONTINUED FROM PAGE 7]

to many tests, we find that the slow-speed motors burn kerosene more economically than those operating at a higher speed. This does not mean that a high-speed motor is necessarily wasteful. The high-speed motor may gain in evenness of the flow of power, thus reducing strain on bearings and gears. This fact is usually made use of in making the high-speed motor of less weight per horsepower than the slow-speed motor.

Some tractors lose much of their power in transmission through long gear trains. Usually we find the four-cylinder motor mounted so that the crank shaft is perpendicular to the belt pulley and axle shafts. Of course, the power is transmitted through bevel gears. In other models we find the belt pulley mounted on the end of the crank shaft with no loss in transmission. These motors are sometimes mounted with the crank shaft parallel to the driving axle, which greatly simplifies the transmission.

It is well to have two speeds forward and reverse, and this is the general practice. The gear shift should be easily operated. Some tractors are equipped with a friction drive which allows almost any number of speed changes. The most successful type of friction drive is that where the driving member is made up of fiber, while the driven plates are metal. The wear is thus evenly distributed, and makes an even drive surface, eliminating grabbing when the clutch is thrown in.

The ignition system is important. Generally speaking, magneto ignition is best for tractor service. Most magnetos for tractor service have tripping devices as an aid in starting, and to prevent back-firing when the motor is cranked.

OWING to the hard service to which a tractor is put in all sorts of conditions of rain, mud, and dust, the lubrication of all moving parts must be dust and mud proof so far as possible. Enclosed gears running in oil is the ideal arrangement. All cups and oilers should be arranged so that they positively protect the bearing from dirt.

Wheel hubs should be protected by caps or other means. While it might seem a small matter, the dust that enters with the air into the carburetor will soon help to wear the pistons, cylinders, and crankshaft bearings. Most of the up-to-date tractors are now equipped with air cleaners or washers. They are very effectual. Fine grit or dirt and oil is a great grinding compound when placed between two moving metal parts.

There are many other points that may mean more or less to the purchaser, and which we will group under point number five. A comfortable seat will do much to relieve the fatigue of the day's riding. A furrow guide will allow the operator to walk occasionally, thus varying the monotony of constant riding. Lighting apparatus will allow night shifts during busy seasons. One should have two sets of lugs of different types, as it will be found that under some conditions one may give better service than the other, or vice versa. A good instruction book will save many a needless call for the service man. These are furnished with most of the best tractors.

Point number six is last, but not least: Before purchasing a tractor I am going to build a suitable structure for housing it. It is going to be large enough so that when the tractor is overhauled—as it should be—there will be room enough to work with comfort and efficiency. Too many tractors are left in the field on the assumption that, being metal and painted, they will not rot or rust. Anyone who has tinkered with a wet ignition system will appreciate the fact that weather may cause operating difficulties as well as much wasted "cussing."

Early Hatches Best

IF YOU want to make your pullets pay for their feed the first winter, have your chicks hatched early, advises Enoch Peterson, poultryman of North Dakota Agricultural College. In the recent state egg-laying contest conducted by Peterson, the early-hatched fowls, of both general-purpose and laying breeds made the best records. If your chickens are hatched early they get their growth and prepare to start laying in the fall. Late-hatched pullets do not make such good layers, as they are not matured before cold weather comes on.

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Union Tires are reconstructed with four extra layers of standard tire fabric, are re-enforced by our double stitching process which insures them against tread and fabric separation. By ordering now at these attractively low prices you will reduce tire expense. Over 200,000 satisfied customers. Our 5,000-mile guarantee certificate enclosed with every tire.

Size	Tires	Tubes
30x3	\$5.50	\$2.00
30x3 1/2	6.50	2.10
32x3 1/2 S. S. only	7.50	2.20
31x4	8.50	2.40
32x4	8.75	2.45
33x4	9.00	2.50
34x4	9.25	2.60
32x4 1/2	10.25	2.65
33x4 1/2	10.50	2.75
34x4 1/2	10.75	2.85
35x4 1/2	11.00	2.90
36x4 1/2	11.50	3.00
36x5	12.25	3.20
37x5	12.75	3.35

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State whether you want straight side or clincher, plain or non-skid. Send \$2 deposit for each tire; \$1 on tubes; balance C.O.D., subject to examination, or 6 per cent discount if full amount is sent with order.

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cost less; outlast three ordinary roofs. No painting or repairs. Guaranteed rot, fire, rust, lightning proof.

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FREE Samples & Roofing Book



Why 50,000 Dealers Sell Goodrich Tires

"The other day I signed up your, or should I say 'our' 1920 agreement, and it occurred to me that you would be interested in my reason for arranging to handle Goodrich on a much larger scale than last year.

It is this: When I opened my store out here, after considering several makes of tires, I decided to take on Goodrich, and the salesman assured me that you would co-operate to help me build up a business that I could be proud of.

Not only have you made good the promise of your salesman, but the fairness and cleanness of your transactions with me have far exceeded any, I thought would be possible from any tire Company.

I was recently asked why I handled Goodrich tires practically to the exclusion of all others, and my answer was; "Because I have not had a Goodrich tire come back, and because I believe they are the best proposition on the market today."

Very sincerely yours,

3083 Main St., Buffalo, N. Y."

John E. Dennis.

IT IS THIS FAITH in Goodrich Tires, Goodrich methods, and Goodrich help, that has caused more than 50,000 dealers to feature Goodrich Tires.

John E. Dennis says, *"I have not had a Goodrich Tire come back."*

If a *tire had* come back, he knew from Goodrich's clear statement of certified service that his customer had full protection in the Definite Adjustment Basis—6000 miles for Fabric Tires and 8000 miles for Silvertown Cords.

The nation-wide demand for Goodrich Tires is proof positive of the soundness and fairness of the Goodrich merchandising policy.

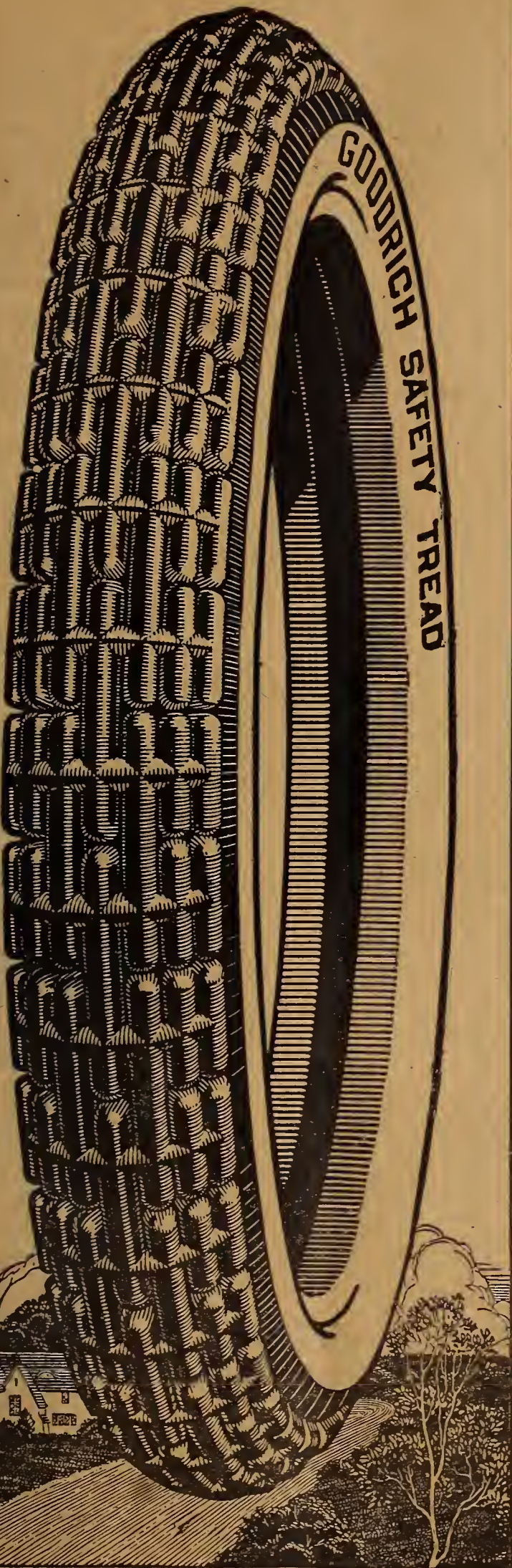
But more important, the economic right of this policy, and the outspoken, open-handed declaration of it, have put the purchase of a tire on a firmer foundation for dealer and user.

Goodrich Tires

FOUNDED 1869



The Goodrich Adjustment Basis:
Fabric Tires, 6000 Miles
Silvertown Cords, 8000 Miles



**Most
Miles
per
Dollar**



The Firestone Cord showing heavy non-skid tread

The Firestone Cord showing extra-heavy non-skid tread

Firestone Park—and Most Miles per Dollar

All ideals that aim toward the general good; all practical efforts at community betterment, have a wide and far-reaching effect.

Firestone Park, a community of homes, churches, schools and all incentives to loyal citizenship—is an example of the way in which the Firestone organization shows itself mindful of the importance of the home in any great working group.

In Firestone Park are gathered together Firestone workers who are also owners of their homes and stockholders in the business.

They are united by every motive of personal pride to make tires of best possible quality at lowest possible cost. Firestone's resources in capital and workers such as these, create economies all along the line—economies that are passed on to the car owner in more tire for the money—more miles per dollar.

FIRESTONE TIRE & RUBBER COMPANY, Firestone Park, Akron, Ohio
Branches and Dealers Everywhere

Firestone

Ditching Made Easy

DITCH contractors and farmers in the southern peninsula of Michigan tell me that of all problems that confront land-owners on the low-lying sections of the State, that of ditching muck is the most difficult.

In connection with H. L. Ostrander of Legrand, Michigan, I made a study of this problem. We decided to try out ditching with dynamite.

Ostrander was advised by the explosive manufacturers to purchase 50 per cent straight dynamite for the work, since in using this more sensitive dynamite, it is not necessary to use more than one cap in a considerable yardage of ditch. This method is called the propagated method, and will work only in very moist, wet, or water-covered soil. Since muck is always in this condition, this method is usually best in muck soils.

The ditch which Ostrander needed was about 30 rods in length, and ran through the worst strip of log and stump infested wet land that I ever saw. The neighbors were not at all reluctant about questioning his sanity when he talked of blasting a ditch through this swamp.



Thirty rods of ditch put through at a cost of a little over a dollar a rod

The line of the ditch was laid out so as to straighten the old crooked creek bed which overflowed at every rain, and at no time thoroughly drained the several acres of fertile bottom land.

The farmers and laborers present, who had done that type of ditching by hand, agreed that no man could dig one rod per day, and that a man could not be secured to work at that type of work for less than \$3 a day. There was not a man present who would agree to do the work for less than \$120.

We sunk bore holes 2½ feet deep along the center line every 18 inches, with an ordinary 1½-inch crowbar. Into each of these was placed one cartridge (one-half pound) of the straight dynamite. We shot three sections each of about 10 rods. The propagated method was used on all of them, and there was no trouble whatever in firing each section with one cap in the center.

The resulting ditch was about 10 feet wide at top, 4 feet at bottom, and from 3 to 4 feet deep. This was somewhat larger than was actually needed. The picture showing the ditch was taken the next morning after the shot. The curve at the bunch of small snags is the upper end of the blasted portion, where the new ditch tapped the bend of the old creek. The stumps shown at the side of the ditch were white cedar, and on the right of way. Practically no heavier loading was required to move them over to the side as shown.

The cost of the ditch was: Labor (planting dynamite only, no other required), \$5; 125 pounds 50 per cent straight dynamite, at \$24.75 per hundred, \$30.94. Total cost of 30 rods of ditch, \$35.94.

In other words, the right of way was cleared and the ditch blown at one operation, and it required only about five hours' time for three men. If the work had been done by hand, one man could not have dug it in a month.

The importance of this experiment can be estimated when it is stated, by the college authorities and county agents, that there are thousands of acres of this fertile muck land in nearly all parts of Michigan. This land when drained is better than even the newly cleared cut-over lands, on account of its extreme fertility. When draining marsh land or straightening out creek channels it might pay you to try this quick and easy way of putting through a ditch.

GUY G. MEANS, Michigan.

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Hundreds already are finding prosperity in Happy Land. Settled community, all farms on good roads, many co-operative organizations, good schools, churches.

Send for free booklet, "A Farm and Home in Happy Land" full of certified facts on crops, soil and climate. Act immediately—prices cannot remain much longer at present low level.

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And once you have a truck ready for any job, you will wonder how you ever got along without it.

There is no question about the utility of a dependable motor truck on any farm.

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You want a truck that is dependable under all conditions; one that will give satisfactory service and will not be in the repair shop when needed for work.

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GENERAL MOTORS TRUCK COMPANY

One of the Units of the General Motors Corporation

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(618)





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WHEN the ground is wet, and your job means lots of walking, what sort of footwear do you put on? Ordinary leather shoes get soaked and caked with mud in no time.

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has been made *strongest*. Its sole consists of heavy layers of the finest rubber. All other points of strain are heavily reinforced.

Ask your dealer today to show you a pair of the new U. S. Bootees. Note their waterproof, smooth rubber surface—feel



"U.S." Rubbers—A wide range of models, in light and heavy styles to meet every need. Made in all sizes, for men, women, and children:

how pliable and comfortable they are—examine for yourself their wonderful built-to-wear construction.

Other "U. S." Models—all built for the hardest wear

Whether you prefer a boot for the wet season, a rubber overshoe for general use, or a cloth-top arctic for the cold—you can find in U. S. rubber footwear exactly what you need.

Every one of these models is made with the same care in details of construction as the U. S. Bootee. Tough, heavy soles—special reinforcements at all points of strain—and *always* the highest quality rubber—these points are winning U. S. rubber footwear thousands of new friends every year.

Ask for U. S. rubber footwear—it means solid wear and long service for your money.



"U. S." Walrus—An overshoe with an all-rubber surface that can be washed off easily. Warm as an arctic. Absolutely water-tight. All weights and sizes in red, black, and white.

"U.S." Boots—Reinforced where the wear is hardest.

- 1 The sole—Five soles in one, all of the finest rubber.
- 2 Back of the heel—Every step you take puts a strain on the seam in back. At this point every U. S. boot is reinforced with *ten thicknesses*.
- 3 The toe—Won't break through like the toe in so many boots. It has three heavy layers, a special toe-cap, and an extra sheet of highest quality rubber on the outside.
- 4 The "bend" in front—A boot has no lacing in front to "give" as you walk. Every mile you cover, the rubber there bends and buckles 750 times. Six heavy thicknesses give long wear to U. S. boots at this point.



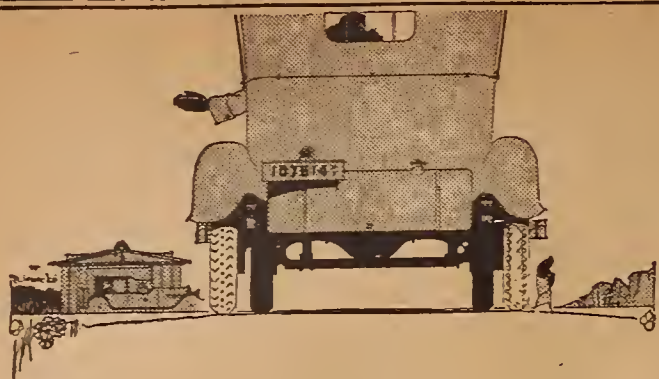
"U. S." Boots are made in all sizes and styles—Short, Storm King, Sporting and Hip. In red, black, and white.

Ask for "U.S."



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United States Rubber Company



The Truth About Tire Mileage

How do you know that the tires you buy are the best tires you can get?

You should know. Tires differ vastly both in wear and uniformity.

You may be losing half the mileage due you.

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Large tire users make comparisons. Some compare 20 makes of tires on millions of miles of road. This is done on stage lines, on taxis and on trucks.

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Green & Swett Co. of Boston say they have put Millers on hundreds of big cars which had used other makes. Mileage increased 50 per cent to 75 per cent. Blowouts were eliminated and only six tires in each thousand come back for adjustment.

not vary. Every tire is signed by the maker and inspector. Both are penalized if a tire comes back. So they don't let faults get through.

There are numerous large cities—like Buffalo—where not a single Miller Tire last year came back for adjustment.

We also prove daily that the tread will outlast the tire. Every lot of tread stock is vulcanized and tested in our laboratory. Not one Miller Tire built under these methods has come back with the tread gone.

So we know every day that Miller Tires will win tests when men make them. Stop guessing. Let

Millers show you what new-day tires can do.

Try a Miller Tire and watch it. If you buy a new car this spring, specify Miller Tires.

THE MILLER RUBBER CO.
Akron, Ohio



Tread Patented

Center tread smooth with suction cup, for firm hold on wet asphalt. Geared-to-the-Road side treads, to mesh like cogs in dirt.

You owe yourself a like test. Put a Miller Tire opposite the tire you are using now. Compare the service that you get. It will be a revelation.

We Never Guess

We know the results you will get. Night and day at our factory we are comparing rival tires with Millers. We wear out over 1,000 tires yearly to prove that Millers constantly excel.

Eight geared-up machines each run these tires 650 miles daily under rear-wheel conditions. Four Pierce-Arrows are driven by our men 320 miles a day. And we make constant comparisons on scores of taxis and jitneys.

We make extreme tests, using under-sized tires and heavy loads. But Miller Cords on our factory machines average 15,000 miles.

We have never found a tire which compares with Millers in the average mileage given.

They Do Not Vary

You will also find that Millers do

Miller Tires

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Specify Miller Tires on your new car if it lacks them

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Detroit, Michigan Agents Wanted

Why is It That One Man Succeeds Where Another One Fails?

[CONTINUED FROM PAGE 18]

elevated railway, and his thought goes out to some simpler and better construction. He is using a set of well-stored and much-used brain cells there, calling up old memories and comparing the new impressions as he goes along.

He sees men and women pass him, some do not so much impress him as to leave any memory at all; he sees a fine man, and feels stronger and better to see that he has such a comrade in the world; he sees a fine woman and looks keenly at her face and at her form and the carriage of her. Instinctively he places her; he is made conscious all at once that he is a man; he stands more erect; he draws a deeper breath; he is glad; he rejoices in every fiber because he is a man and because there are such fine women in the world.

HE HAS no memory of fear, for he has been neither a criminal nor a coward, and has no cells stored with evil memories to come popping out unwelcome to torment him. So his progress along the street is one of vigorous, manly attention and reflection. He is storing every instant new memories, either in new cells or else overlaying new impressions over old ones, maybe on cells used years ago and where the first impressions are nearly rubbed out—no one can tell as to that. It is held by some learned and thoughtful experimenters that there is a limit to the number of memories that a man can hold, and, if so, maybe the cells must be overlaid with memories after a time, and the old ones partly or nearly obliterated. We may never know of that with assurance.

Now about the other man walking that same street, having the same range of objects brought to his eyes: his eyes too are physically as perfect, his body much the same. He sees not the architecture except as a mass of buildings that he knows holds men and goods; he notes perhaps what the other man did not—the change in fashion in waistcoats displayed in a window; he has no memory cells charged with architectural forms, but he has memory cells charged with details of many forms of clothing and apparel.

The elevated track brings to him but one impression: it darkens the street and makes a disagreeable noise; it awakens in him the feeling of hate. He too sees women as they pass by, but he looks at them without the reverence of the other man: he sees the animal that is in woman; he seeks out with his eyes the lowest of woman-kind's types; having memories of degrading associations with depraved women, he continues to store yet other memory cells with related impressions.

He has yet other memories. He has been under arrest, he has passed a little time in a cell. The sight of a police officer disturbs him and brings back these painful pictures. He feels a sense of fear and hurries on. He cannot stand erect and look the world in the face because of the memories that are stored within him, and that tell him he is not the sort of man that is equal to the best of men—a haunting sense of fear, perhaps of shame.

Thus the one man grows steadily more full of good and useful memories; the other

degrades himself by filling his memory cells with degrading memories, depressing his manhood with fear. And each man started out a blank, with no memories at all. How, then, comes the wide divergence that we see at last?

In large part, no doubt, it is the environment, the things surrounding him, that make a man. In large part it is opportunity. The one man had large opportunity to store wisely his memory cells. He was born among honorable, brave, clean, unashamed men. He saw what they saw, and learned to admire and observe what they observed and admired. Those things made such a deep impression on him that he formed the habit of storing such memories.

Other things that he could see with his material eyes meant so little to him that while he was aware of their existence he made no account of them, unconsciously he passed them by. He saw the fancy vests in the shop windows, but took no note of their having been a change in pattern. He saw the woman of the streets, but did not recognize her as such, and had he so recognized her it would have been with a feeling of wonder, disgust, and pity. He had no memories linking him with such as her. He saw the police officer and admired his fine form and trim uniform. That man awakened no sense of fear in him, for he had no memory cells charged with scenes of arrest or imprisonment.

Partly then it is environment that makes the man. Very largely, indeed, it is environment that makes the man. I wish here to call to note the truth that there is a selective force in mankind, this selective force differing in men. Some instinctively, as we say, conserve one thing, some another—that is, the ego differs, and in a measure directs the observation and the use of material to be gathered and stored. That it is that makes the essential difference in men, that makes the man a man and the woman a woman, in brain; that makes the artist an artist, the poet a poet, the orator an orator. The memory cells are there in each case, though they will differ considerably in arrangement and numbers, no doubt, but mainly they differ in having been put to different uses by this nimble and elusive sprite that we call ego.

THAT is why it is a commonly accepted fact that the man who works hard at his business, finding out facts about it, and using those facts to figure out better ways of running his business, is the man who succeeds. He is the man who looks for and draws to himself, as a magnet, only those things which he can use to advantage in bettering himself physically, mentally, morally, and financially.

You have just as good an opportunity to do this for yourself as any man has. And it is entirely up to you what you make of yourself. No one can make you fail but yourself. No one can make you succeed but yourself. If you have failed, there is a way out. If you have succeeded, there are ways you can succeed still more.

NOTE: This is the first of two articles by Mr. Wing on this subject. The second will appear next month.

Great Men Are Merely Average Men Who Have Worked a Little Harder

WE HERE on FARM AND FIRESIDE are great believers in the average man. Average men are the raw material from which above-the-average men are made. No matter how average an average man may be, he can lift himself above the average if he will try. We all start out in the world perfectly helpless. In later years we become helpful and useful to ourselves and others in the exact proportion that we use or neglect the brains the Lord has given us.

If you are content to be nothing and do nothing, you will be nothing and do nothing. You will succeed only in so far as you work and strive to succeed. How poor you are, or how ignorant you are, has nothing to do with it. The men who go the farthest are usually the men who start with the least—as Abraham Lincoln. It is the spirit that is within you that counts.

"It is difficult to make a man miserable while he feels he is worthy of himself," said Lincoln. And again:

"Success does not so much depend upon external help as self-reliance."

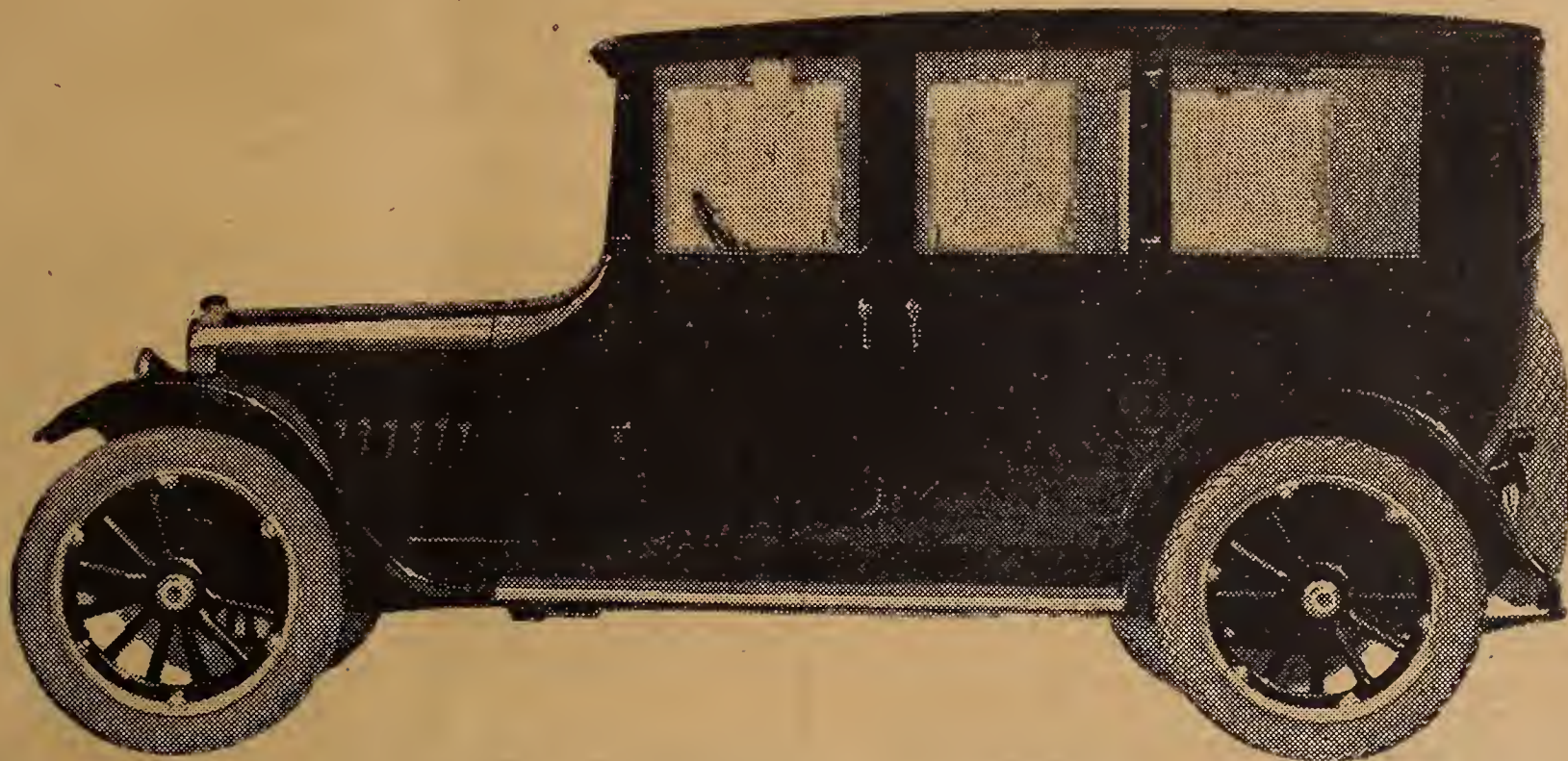
And again:

"You are destitute because you have idled away your time." And again:

"Shall he who cannot do much be for that reason excused if he do nothing?" To the man who rightly tries, all things are possible. THE EDITOR.



OAKLAND OWNERS REPORT RETURNS OF FROM
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THIS NEW OAKLAND SENSIBLE SIX FOUR DOOR SEDAN IS POWERED WITH THE FAMOUS 44-HORSEPOWER, OVERHEAD-VALVE OAKLAND ENGINE

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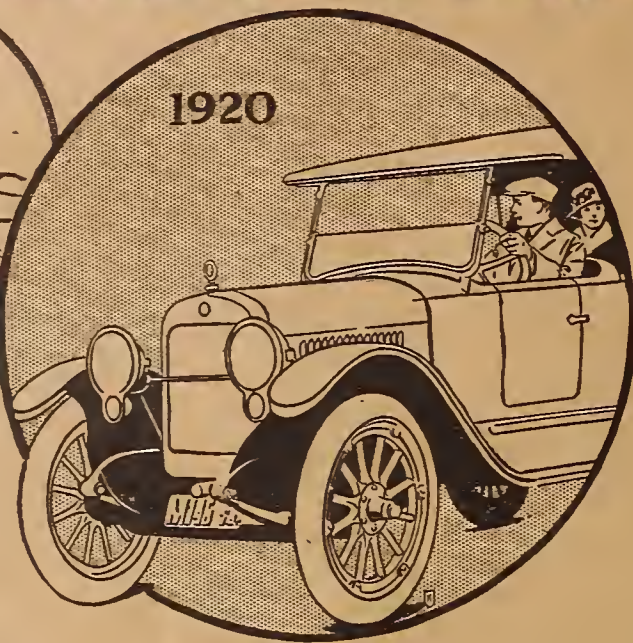
NOWHERE better than on the country roads of America, has the new Oakland Sensible Six four door Sedan proved its remarkable worth as a means of thoroughly efficient transportation. There it is daily demonstrating its pronounced value as an investment, not only by delivering service of the most reliable order, but by combining this with maximum comfort at the minimum of operating cost. The Oakland Sensible Six today embodies the most advanced principles of high-power and light-weight construction and a degree of mechanical efficiency that even the most strenuous usage cannot defeat. Only immense manufacturing resources, and a production of unusual magnitude, make possible the very moderate price at which it is sold.

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Pontiac, Michigan

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Why I Think Every Farm Should Have a Garden

By James Simpson

IT HAS been my experience that the farm garden can be made one of the best-paying parts of the farm—in fact, for its size, the most profitable plot of ground on the place.

But most farm gardens I have ever seen were away below par. I've had occasion to see many of them, and I've had my own for years. So I know what can be done, as well as what is usually done. I'm not making the mistake of thinking that we farmers can follow the advice of some garden writers, and use the detailed, elaborate plans prepared for us.

I think the biggest mistake with most farm gardens is that they are not given any thought, because it isn't realized that

wanted to "bother" with a real vegetable garden.

We get most of our vegetable garden planted before we can put in our regular farm crops. I never realized, till Henry proved it to me, that many vegetables can be planted safely just as soon as the ground is dry enough to turn over nicely. Our garden patch is a well-drained, sheltered slope that we can plow before the other fields are ready.

We have all the seeds on hand; Henry orders them a month ahead of time, so as to be sure of getting just what he wants. As soon as the garden patch is fitted we take advantage of every odd half-hour or two to go ahead with the planting. As the



they are worth giving thought.

Certainly, the farm garden should supply the farm table not only during the summer, but also during the fall, and most of the winter months as well. Most farmers have the advantage of a good cool storage cellar, where vegetables and canned supplies may be kept in good condition.

There is such a great variation in the conditions determining what should go into a farm garden that it is hardly necessary to make any set plan. I recall the "garden" I used to have, when I first began farming. It was typical of many other farm gardens I have seen. What we have done since then pretty much covers the whole argument of why a good farm garden pays.

In common with most of my neighbors, I reckoned I wasn't "goin' to let the growin' of garden sass interfere with my farm-in'," and I put in my field crops before I did any gardening. I would get around late in May, or maybe in June, to buy a couple of dozen tomato, a hundred cabbage, and some lettuce plants. In addition to these we planted plenty of peas, beans, sweet corn, turnips, radishes, and cucumbers—several long rows of each, at the edge of one of the regular fields. Our garden used to get just nicely started by the time dry weather came. As a result, half of the things would fail to do anything. The beans, sweet corn, and tomatoes might come along all right. If they did, we had several times as much of each as we could use.

BUT when Henry got back from college, where he'd taken a course in vegetable-growing, among other things, our "garden-in" had to be changed. Nowadays we figure that the vegetable garden is a very real part of our regular farm work.

"What we don't have to pay to the grocer and the butcher we can leave with the banker," Henry said. "A dollar saved on canned goods in the winter is just as good as an extra dollar for wheat or potatoes in the fall."

And generally it's considerably easier to save this dollar than to grow a dollar's worth of most field crops, at the prices we farmers get.

But we don't let the vegetable gardening upset our farm work—not a bit. Our plan is simple, but it works; and it might well be followed by many farmers who never have

This is James Simpson planting his own garden

seeds and garden tools are kept in a near-by shed we can make the spare minutes count.

But we don't attempt a city man's garden, with every square foot cropped and intercropped. The rows are mostly 36 inches apart, so we can cultivate with a horse. Some of the smaller things are put at 18 inches, but even these we get through with our light horse and a 12-tooth harrow cultivator, with the outside teeth removed. We keep a wheel hoe in the tool shed, and much of the work is done with this. It can be used at odd moments when it wouldn't pay to stop and harness a horse. Enough horse cultivation is done, however, to keep the soil loose, and in shape to run over easily with the hand machine.

WE PUT in onion sets, peas, cabbage plants, cauliflower, and parsnips 36 inches apart; onion seed, Swiss chard, lettuce, beets, carrots, turnips, and spinach 18 inches apart. An extra early planting of sweet corn is made just as soon as it's safe to take a chance.

After planting, the vegetable garden doesn't take much time until after the rush of spring work is cleaned up, and potatoes and corn are in. Then we plant another section of the garden to sweet corn, tomatoes, beans, pole beans, summer squash, winter squash, melons, and cucumbers. Often, if we've been too busy to get round to it before, much of this planting is done as a sort of Decoration-day morning celebration. Everybody works fast, because the boys want to get off for the ball game in the afternoon.

Then, along toward the end of June, we make a third general planting. We put in a generous sowing of beets, carrots, and table rutabagas, for use in late summer and fall, and for storing for winter; also second plantings of beans, sweet corn, and other things wanted for canning. Celery, cabbage, cauliflower, and Brussels sprouts are set out on or before the Fourth. Henry got me started on the "sprouts" because they'll keep, right where they grow, for Thanksgiving and Christmas dinners.

We don't plant our garden as a cash crop, but we do sell some vegetables to folks who come and get them, in the summer—and there are more of these each year. We take in \$100 to \$150 this way. We put up (or rather "Ma" does), and store for winter, vegetables which, if bought at the store as

[CONTINUED ON PAGE 60]

AGRICULTURAL GYPSUM

Gypsum has great value as a soil builder. Its application to clover, alfalfa and other legumes causes an enormous increase in the size of the root systems and tops of these crops. It produces many more nitrogen fixing nodules on the roots. This, in some cases, means ten or twelve times as much nitrogen fixed per acre, thus furnishing much more nitrogen for the farm and for later crops. That's why

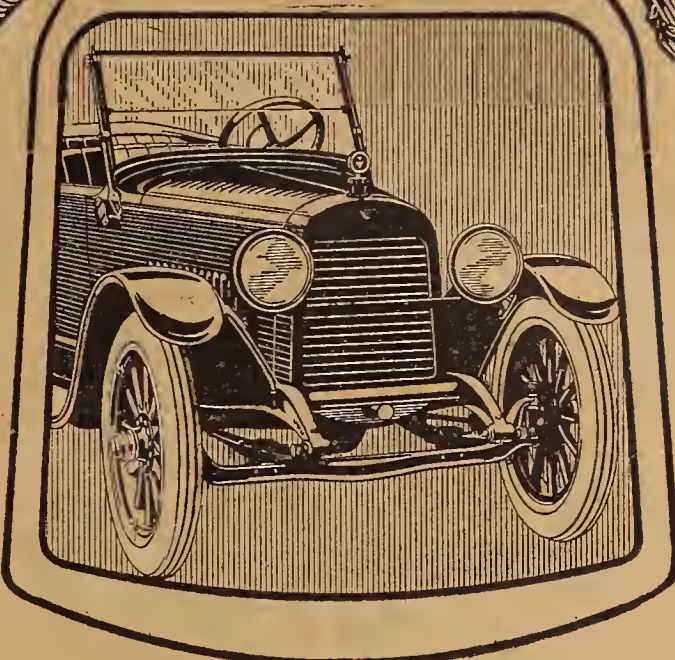
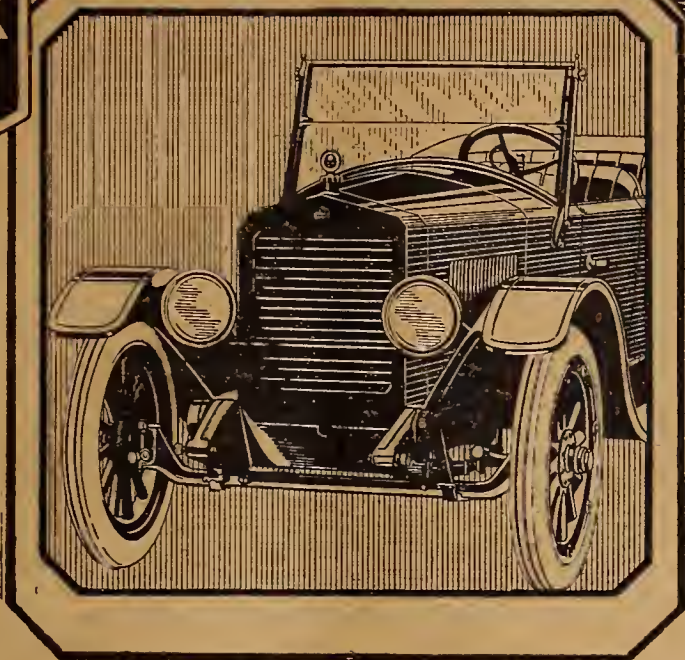
A Gypsum Test Strip on Your Fields will Prove Its Worth in Greater Yields

In early Spring, just as growth starts, sow a strip across your alfalfa or clover field or across your white clover blue grass lawn and let it tell its own story. Rate of application 200 to 400 pounds per acre. Get a supply of Agricultural Gypsum from your nearest building supply dealer. Write us for free information on various uses of Agricultural Gypsum as an efficient and economical soil builder.

GYPSUM INDUSTRIES ASSOCIATION, Dept. F, 111 W. Monroe St., CHICAGO



FIG. 1 FIG. 2
Fig. 1 shows root system of alfalfa fertilized with GYPSUM. Fig. 2 shows root system without GYPSUM. From Bulletin 163 of Oregon Ag. Experiment Station



Only Essex Shares Hudson's Qualities

*They Show Why Essex Went 3037 Miles in 50 Hours,
and is Rightful Runner-up to the Super-Six Performance*

A critical public has judged the Essex.
In the year past it set a world's sales
record.

More than \$35,000,000 was paid for
22,000 Essex cars now in service.

That shows how men wanted what
Essex offered.

Now Essex proves the accuracy of
motordom's judgment.

Let the official tests speak:

On the Cincinnati Speedway a stock
chassis Essex made a new world mark of
3037 miles in 50 hours, under observation
of the American Automobile Association.

With other trials the same Essex ran a
total of 5870 miles in 94 hours, 22 minutes
driving time, averaging over a mile a
minute.

Both Have This Motor Heat Control

Still another Essex phaeton holds the
world's 24-hour road mark of 1061 miles.

The Essex and Hudson are of course
totally different types.

But note the advantages Essex shares
with Hudson.

For instance, the radiator shutters by
which efficient operating heat is main-
tained in coldest weather. They mean
everything to satisfactory winter driving.
Closed, they keep the heat in.

No unsightly hood covers are needed.
They give summer efficiency to gasoline.
They end hard starting. And in warm
weather, opened, they give the maximum
cooling.

The Performance Leaders in Every Community

The Essex, of course, does not cost as
much as the Hudson, and though it is
admittedly the runner-up in performance,
it can never be all the Super-Six is.

In speed—in acceleration—in hill-
climbing—in endurance—no stock car
ever matched Hudson's famous records.

In every community you will find the
two cars most noted for performance are
the Hudson Super-Six and Essex.

Demand for both is so large that only
by placing your order ahead can you in-
sure delivery when you want it.



Champion Dependable Spark Plugs

Did This Ever Happen to You?

WHEN putting in spark plugs, has your wrench ever slipped, banged into another plug and cracked or broken the porcelain insulator?

Champion Spark Plugs stand this rough treatment and do not crack or break; our famous No. 3450 Insulator has been developed and strengthened to such a degree.

There is a Champion Spark Plug for every type of engine on motor cars, trucks, tractors, motor boats and airplanes.

Be sure the name *Champion* is on the Insulator and the World Trade Mark on the Box.



Champion Spark Plug Company, Toledo, Ohio
Champion Spark Plug Company, of Canada, Limited, Windsor, Ontario

TIRES 1/3 LESS
Perfect, new tires, all sizes, non-skid or plain, fabric or cord. Prepaid on approval. 8000 to 10,000 Miles Guaranteed.
30,000 Customers. Catalog Free. Agents Wanted.
Service Auto Equipment Corporation
929 Service Bldg., Kansas City, Mo.

Send for Catalog
FARM WAGONS
High or low wheels—steel or wood—wide or narrow tires. Wagon parts of all kinds. Wheels to fit any running gear. Catalog illustrated in colors free.
Electric Wheel Co., 13 Elm St., Quincy, Ill.



The next time you do this, buy a small can of Effecto Auto Enamel. It's a great tonic for banged fenders, and'll surprise your wife almost as much as the backin' out stunt!

Effecto Auto Enamel is a wonder-worker on banged and scraped fenders. The Effecto habit will keep your car looking new, and the gnawing tooth of rust won't get a start. A small can of Black is a handy thing in the garage and costs little.

Effecto AUTO FINISHES

Made in nine live auto enamel colors: Black, Blue, Green, Red, Brown, Yellow, Gray, Cream and White—the original, genuine auto enamel. Not a paint, wax or polish, but an

enamel finish that will last longer than the finish on most new cars. Also made in clear Finishing varnish for cars in fairly good condition, and Top & Seat Dressing, which renews and waterproofs old tops, cushions and all upholstery.

Be sure you get the genuine Effecto Auto Enamel—there are already many imitations:

Send for Color Card and Name of Local Dealer

Effecto is sold by paint, hardware and accessory dealers everywhere. If you have any trouble getting the genuine Effecto Auto Enamel write us at once. We will see that you are supplied.

Pratt & Lambert-Inc. 169 Tonawanda St., Buffalo, N. Y. Canadian address: 115 Courtwright Street, Bridgeburg, Ontario.

Have You Spark-Plug Troubles?

By George P. Pierce of Illinois

TAKE care of your spark plugs and adjust them properly and you will be surprised to find what good service they will give. It is a fact that very few spark plugs ever wear out through service. Take up a handful of scrap plugs in a garage and you will find broken porcelains, damaged threads, broken wire points, distorted shells, and other indications of misuse; but you will have to look quite a while before you find one in which the spark points have actually burnt away so they could no longer be adjusted.

The first thing you want to do is to quit blaming your spark plugs every time you have so-called "spark-plug trouble," because most of the time it is no fault of the spark plug that it gets dirty and foul. If you have a cylinder that pumps oil either through scored or worn walls, or because some of the piston rings are defective, you are going to have spark-plug trouble, and the only way to cure it will be to regrind the cylinder or put in new rings. Of course, if you regrind the cylinder you will have to put in new oversize pistons and rings.

Some time, however, you may take a plug to pieces and clean it and put it back, only to find it foul up in a very short time, and by changing it to another cylinder to check whether the plug or cylinder was at fault you will find that it is undoubtedly some trouble with the plug. In this case

you will probably discover that the cause of the trouble is a gas leak due to the stuffing ring of copper or copper asbestos being split or bruised, or else not being tightened sufficiently. These gas leaks allow the spark to leak over the porcelain on the outside, and also draw oil and carbon into the plug and foul it. The cure for this trouble is to put new stuffing rings in the plug and pull them up tight. Use a wrench about six inches long, and set up fairly tight with one hand and it will be about right. On the other hand, a frequent trouble develops due to pulling up the stuffing ring too tight and cracking the porcelain at the shoulder, where it can not be seen. The spark, however, will tend to leak through at the crack, and once again the cylinder starts missing.

THE best way to clean a dirty plug is to take it to pieces and scrape out all the carbon on the inside of the shell with an old pocket knife, and then carefully clean the porcelain with a piece of waste or rag dampened with kerosene. Never use sandpaper or anything of an abrasive nature, because it will take the gloss off the porcelain and then the mat surface will soot up much more quickly. All carbon should also be carefully scraped off the points, and then the plug is ready to assemble. When putting the porcelain

back, press it down firmly and squarely before tightening up the stuffing gland. This will help to keep the center point in the middle, and will save bending the points very much in adjusting the gap.

A GOOD method of setting the points is to use a pair of pliers with a pointed end, so the wire can be easily grasped and carefully bent. Be sure to bend in a curve rather than a square bend, because this will distribute the strain over more surface and the point will not be so likely to break off. The habit of using a screw driver or something similar to pry the points into adjustment is very apt to bend the wire in the same place, and will soon cause a break. For a gap gauge use a strip of 22-gauge galvanized sheet steel, say five-sixteenths by 2 inches, which is almost one-thirty-second-inch thick. This is easy to hold, and should always be kept in the tool box.

After the plug has been cleaned and assembled it is advisable to put three or four drops of a mixture of engine oil and powdered graphite on the threads, which will tend to make the plugs tight-fitting and easy to change.

After you have changed plugs do not tighten the terminal on the high-tension wire connection with a pair of pliers, because you are apt to cause the center wire to twist a little, and may completely spoil the spark-gap adjustment and make the

engine run irregular. If the terminal is made tight with the fingers it will be tight enough, and if the high-tension leads are properly supported they will not cause the nut to loosen up.

The exposed part of the porcelain should be wiped with a piece of clean waste or rag every time it gets dusty or dirty, because if dirt is allowed to accumulate it will frequently allow the spark to leak across the surface instead of jumping the gap. A deposit of moisture on the exposed porcelain will sometimes stop the engine.

When removing a plug, always use a wrench that really fits the hexagon of the shell, and for this purpose a special socket wrench is very satisfactory, because it protects the porcelain from being accidentally knocked and cracked; it never slips, and you cannot twist the handle over and break the next plug. Do not attempt to use a cracked porcelain at any time, for it is certain to give you trouble. Fine surface hair cracks, however, are not necessarily troublesome, and the porcelain need not be scrapped on this account. When assembling a plug, if the copper-asbestos gasket looks squashed and glazed so it will not squeeze up or take up any more, use new ones; in fact, it is a good policy to take no chances by always using new gaskets for this purpose.

It Pays to Plan Your Work

IN PRESENT times of high production cost, many farmers are finding that it pays to re-arrange their farms with regard to economy and efficiency of operation. It has been noted in a number of cases that well-arranged farms have brought a higher price on the market, particularly where there is easy access to the fields from buildings and highways. The Ohio Experiment Station finds that it takes an average of 53 work hours to produce an acre of corn on rectangular fields, containing 10 to 15

acres, while the time required in irregular fields of the same area was 61 hours. Where tractors and large horse-drawn implements are used, the advantages of the long and regular shaped fields are very evident. Many farmers are now draining wet spots, removing trees, stumps, and brush, and straightening fences so as to make their farming operations easier. In the olden days it didn't matter if it took a few more hours to do a certain job. With the present scarcity and cost of farm labor it does. Often the land reclaimed pays the expense of rearrangement the first year.



"Here he comes now with our dinner"

Photo by J. C. Allen

MADE BY THE MAKERS OF PRATT & LAMBERT VARNISHES

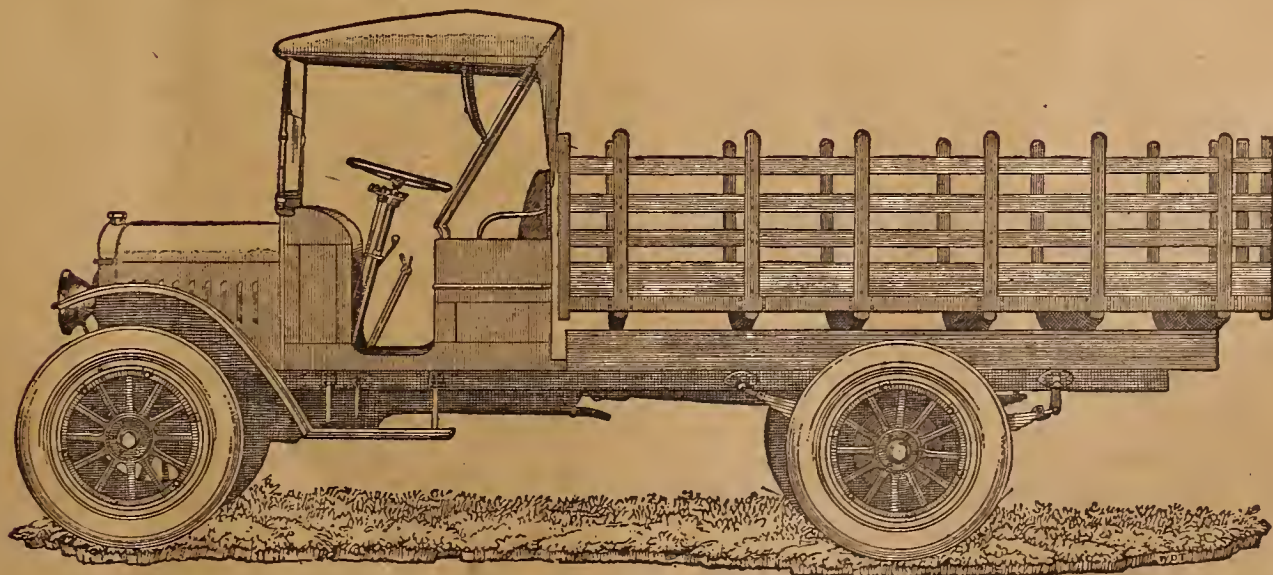
5 Things Worth Remembering about a MAXWELL Truck

1. It has a worm drive, which is the predominant feature of most worth while trucks.
2. It hauls $1\frac{1}{2}$ tons; 75% of all loads carried by horse or motor are $1\frac{1}{2}$ tons or less.
3. It uses less gas and oil hauling a peak load than many trucks use with no load.
4. It is very simple in design (more brains than metal have been used in its construction); it travels faster than a larger truck. 16,000 have supplied abundant evidence of its economic transportation.
5. A comparison with other $1\frac{1}{2}$ ton trucks shows a saving of \$300 to \$400 in the original investment in a Maxwell.

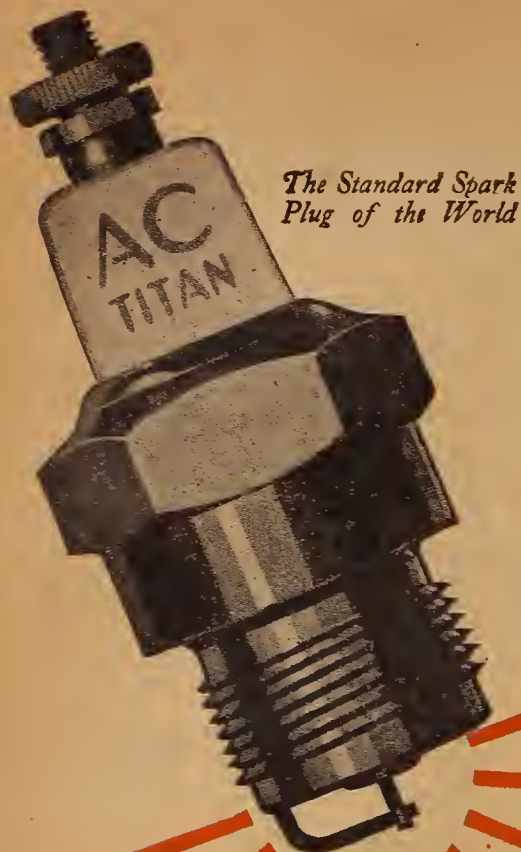


*More miles per gallon
More miles on tires*

Maxwell Motor Co., Inc., Detroit, Mich.



To Owners of A-C Equipped Cars



*The Standard Spark
Plug of the World*

This advertisement is directed especially to the owners of those motor cars which are factory-equipped with AC Spark Plugs.

Our dealers tell us it is usually the new motorist who is prevailed upon to experiment with various plugs—that the veteran driver insists on getting AC's when he asks for them.

The chief engineer who designed your car did not specify that some cylinders should carry AC's and other cylinders other plugs.

He equipped your engine with a full set of AC's.

A special AC Spark Plug has been carefully designed for the car you drive. It has the full approval of the factory which produced that car.

Isn't it logical that you will secure the best results if you take care that your engine is always full-equipped with AC Spark Plugs?

Champion Ignition Company, FLINT, Michigan

These manufacturers use AC Spark Plugs for factory equipment

Acason Trucks	Beck-Hawkeye Trucks	Chicago Trucks	Dynelectric Plants	Hatfield	Koehler Trucks	Nelson	Pioneer Tractors	Scripps Motors	Trego Motors
Ace Trucks	Bellanger Freres (France)	Clark Tractors	Eagle Tractors	Haynes	Lafley-Light	Nelson Tractors	Pittsburgher Trucks	Signal Trucks	Union Marine Engines
Advance-Rumely Tractors	Bessmer Trucks	Cleveland Cole	Economy	Herschell-Spillman	Leach Power-Plus Six	Nelson & Le Moon Trucks	Porter	Singer	Universal Trucks
Ahrens Fox Fire Trucks	Betz Trucks	Collier Trucks	Essex	Highway-Knight Trucks	Liberty	Netco Trucks	Premier	Speedway Motors	United Trucks
American Beauty	Birch	Comet	Excelsior Motorcycles	Holt Tractors	L. M. C. Trucks	New Britain Tractors	Ranger Trucks	Standard "3"	VanBlerk Motors
American-La France	Bour-Davis	Commonwealth	Fairmont Ry. Motors	Hudson	Maccar Trucks	Noble Trucks	Red Wing Thorobred Motors	Standard Trucks	Veerac Motors
Anderson	Braddon	Conestoga Trucks	Federal Trucks	Hupmohlle	Maibohm	Oakland	Reo	Stearns-Knight	Vim Trucks
Apex Trucks	Bradley	Continental Motors	Flour City Tractors	Hurlburt Trucks	Marmon	Old Reliable Trucks	Re Vere	Stearns Tractors	Wallace Tractors
Apperson	Briggs & Stratton	Curtiss Aeroplanes	Frontmobile	Independent Trucks	Master Trucks	Oldsmobile	Reynolds Trucks	Sterling Engines	Walter Trucks
Appleton Tractors	Motor Wheel (formerly Smith)	Danleys	F-W-D Trucks	Jackson	Maxim Fire Trucks	Onelda Trucks	Riker Trucks	Sterling Trucks	Ward La France Trucks
Argonne Four	Dart Trucks	Davis	Galloway Engines	Johnson Motor	Maytag	Owens Light & Power Plants	Roamer	Stewart Trucks	Westcott
Atco Trucks	DeLancey Trucks	Delco-Light	Gary Trucks	Wheel	McLaughlin (Canada)	Packard	Roberts Motors	Stockton Tractors	White
Auburn	Delco-Light	Denby Trucks (Canada)	Genco Light	Jordan	Metec	Pan	Robinson Fire Trucks	Stoughton Trucks	White Hickory Trucks
Austin Manufacturing Company	Buick	Diamond T Trucks	Gilde	Jumbo Trucks	Midwest Engines	Parker Trucks	Rock Falls	Straubel Engines	Whitney Tractors
Available Trucks	Bullock Creeplog-Grip Tractors	Diehl Trucks	C. B. S. Motors	Kalamazoo Trucks	Minneapolis Motors	Paterson	Rowe Trucks	Super Trucks	Wichita Trucks
Avery Tractors	Cadillac	Dodge Brothers	G. M. C. Trucks	Kearns Trucks	Mitchell	Patriot Trucks	Rutenber Motors	Swartz Lighting Plants	Wilson Trucks
A & T Tractors	Cameron	Dodge Brothers	Gramm-Bernstein Trucks	Kent Coconcrete Mixers	Moline-Knight	Perfect Power	Samson Tractors	S-S-E-Co.	Wisconsin Motors
Bates Steel Mule Tractors	J. I. Case T. M. Co.	Doman Engines	Gray Dort (Canada)	Kissel Kar	Monroe	Sprayers	Sandow Trucks	Tiffin Trucks	Wolverine Tractors
	Chalmers	Domestic Gasoline	Hackett	Kleiber Trucks	Moreland Trucks	Philanna	Sanford Trucks	Tloga Tractors	Woolery Ry. Motors
	Chandler	Pumping Engines	Hahn Trucks	Klein Trucks	Napoleon Trucks	Pierce-Arrow	Sawyer-Massey Tractors (Canada)	Titan Trucks	
	Chevrolet	Dort	Hall Trucks	Knox Tractors	Nash	Pilot	Scripps-Booth	Tower Trucks	
		Duesenberg Motors	Harvey Trucks		National				

How One Texas City Helps Farmers

By S. R. Winters

COMMERCIAL and civic organizations that issue voluminous boosting data—which is never read—and invite foreign industries to locate in "the grandest and most beautiful town in the United States," are gradually being displaced by a new type of trade body. The board of trade or chamber of commerce of to-day must adapt itself to practical needs of the community, relate the interests of farmer and city dweller, and act in terms of downright community welfare.

The trade body that conducts a public market, holds a get-together meeting of farmers and merchants, and maintains a rest-room for farmers' wives—these activities are outcroppings of the new type of commercial organization. But the Chamber of Commerce of Tyler, Texas, moves up a peg, and establishes its identity as a marketing agency for live stock. It acts not merely in an advisory capacity, but actually assembles the farmers' hogs, ships the live stock to market, and writes the checks for the products sold.

Moreover, nobody draws a salary—every penny of the sales going into the farmers' pockets. It is strictly a co-operative farmers' marketing association, with the Chamber of Commerce as the selling agent. Expenses incurred by feeding, the commission merchant's commission, and freight charges are pooled, each shipper paying his share of the aggregate bill.

Each farmer weighs his lot of hogs, obtains a public weigher's receipt, and this receipt is deposited with the Tyler Chamber of Commerce. P. T. Burns, the county agricultural agent, examines the shipments and markets the car lots. Shrinkage is deducted and the percentage assessed, and then each shipper is paid for the pounds shipped. For instance, one shipment of 45 hogs topped the market. These topnotchers were separated from the entire lot, and each farmer of this particular lot shared in the inflated prices for the superior product.

Because of its central location and its facilities as a live-stock market, Fort Worth is the destination for all hogs marketed by

the Tyler Chamber of Commerce. During the hog-shipping season, shipments to Fort Worth are made regularly every two weeks. The days selected for marketing are announced some time in advance through the weekly and daily newspapers of Smith County. The opportunity to use the marketing facilities of the Tyler trade body is extended to every farmer in the county.

The number of participants in the co-operative plan varies from fifty to seventy-five farmers, as many as three cars being marketed at a time. The live-stock growers are required to list several days in advance, and the freight charges of 20 cents on 100 pounds are advanced by the shippers to the commercial organization. Failure of any farmer to market his stock after listing it with the Chamber of Commerce forfeits his claim to the advanced freight charges—the amount being retained by the trade body.

Thirteen hundred pounds is the minimum weight of the car shipped, the cars being loaded heavily if the weather is cool. County Agricultural Agent P. T. Burns obtains a cashier's check from the live-stock commission merchants of Fort Worth, as well as a detailed statement of the business transacted. The Tyler Chamber of Commerce issues checks to the individual shippers.

For the past fourteen months the Tyler Chamber of Commerce has brought into Smith County approximately \$150,000 through the sale of 49 car lots of hogs.

"These 49 car lots shipped by the Chamber of Commerce have brought a profit of from \$350 to \$500 a car, over the local price," says Secretary A. L. Burge. "This plan has been highly satisfactory, and has greatly increased the number of hog raisers in Smith County. Smith County has shipped more hogs to the Fort Worth market the past twelve months than any county in Texas."

Live-stock prosperity is fundamentally interwoven with other forms of profitable activities, hence Smith County shipped the first car lots of strawberries, peaches, and blackberries that went out of Texas.



A carload of hogs assembled by the Tyler (Texas) Chamber of Commerce, and ready for shipment to the Fort Worth market

Is Your Property Safe?

EVERY once in a while I see that I have figured that a certain convenience is for the city man only. Then I find that it is just as handy and pays as well on the farm as anywhere else.

This time it is a safety deposit box in the bank where I do business. It costs me \$1 for the keys, and that is all. If I ever want to discontinue its use I get my dollar back, so it costs me in reality about six cents a year, since that is the interest rate here. But so far as the cost is concerned I believe it would be worth far more.

I keep my insurance policies, my deeds, and canceled notes and mortgages in this box. Outside of the deed for the farm the others could be replaced if taken by thieves or if burned. But in my case the man who

deeded the farm to me is insane, and has no heirs except uncles and aunts. The cost of replacing this deed would be quite an item, and it would also be a great bother. I am starting on this farm and in debt, so I don't have many notes on hand, but a farmer who is further along and out of debt could easily have dozens of them, as well as securities of other sorts that must be kept safe. It is true that most men pay their notes, but there are some who wouldn't if a note were lost. Some securities require no endorsement, and when stolen are easily sold. Some Liberty bonds, for instance, are of this sort.

The bank vault is about as safe for these papers as any human can make a place. It certainly is fire-proof, and it is also burglar-proof. Better look up a safety box in your bank. It may save you a hundred times its cost. EARL ROGERS, Ohio.

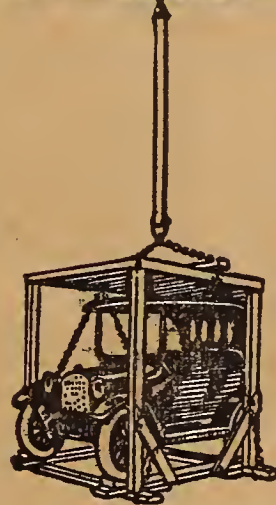


THIS is the remarkable tube that, in three moving picture tests, did these things:

- 1—Lifted a five-passenger touring car and scaffold—total weight 2990 pounds.
- 2—A year later, lifted a load increased to 3755 pounds.
- 3—Expanded to sixty inches in circumference without bursting.

And not one of these tests harmed it in the slightest degree.

Greatest strength, elasticity, highest quality, yet sold at approximately the price of ordinary tubes.



Tube holding crated touring car and platform—total weight 2,990 pounds—in complete suspension without slightest injury or loss of resiliency.

Makers of Vacuum Cup Cord and Fabric Tires

PENNSYLVANIA RUBBER CO.

Jeannette, Pa.

Export Dept., Woolworth Bldg., New York, N. Y.

Direct Factory Branches and Service Agencies Throughout the United States and Canada

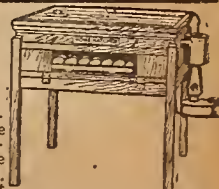
Guaranteed Tensile Strength 1 1/2 Tons per square inch!



The Ottawa Log Saw does the work of ten men. Makes wood sawing easy and profitable. When not sawing wood use for pumping, feed grinding, etc. Simple, economical, durable. Thousands in use. Fully guaranteed, 30 days' trial. Cash or Easy Payments. Write for Low Price. OTTAWA MFG. CO., 971 Wood St., Ottawa, Kans.

Get big hatches with this new HOME HATCHER INCUBATOR

Dependable up-to-date hot-water heating system; accurate temperature regulation; positive ventilation and moisture control. Constructed of cypress, the wood everlasting, and built for long use. Nothing fussy, but an honest, scientific, modern incubator, sold at a price you can easily pay. Raise your baby chicks in the Home Hatcher; safe, simple, inexpensive. Ideal for colony coop or poultry house use. Send for the plain-facts catalog of the Home Hatcher and Home Hatcher and order early. Write today. Homer Mfg. Co., Box 12, Homer City, Pa.



Now Is the Time to Buy Roofing!

Order direct from this list TODAY



HERE'S your big chance to buy prepared roofing, steel roofing and siding at very low prices—but you must act quickly to get your share of these savings. Don't hesitate—don't delay—do it NOW—TODAY. Select liberally from the six special lots below.

Lot KR-1

Ajax high grade rubber surfaced roofing in rolls of 108 square feet; complete with nails and cement. 2 ply, per roll \$1.85; 2 ply, per roll \$1.60; 1 ply, per roll \$1.22.

Lot KR-2

Rawhide stone faced gold-medal roofing guaranteed 15 years. Rolls contain 108 sq. ft.; complete with nails and cement for laying. Extra high grade stock at big saving. Per roll \$2.75.

Lot KR-3

Rawhide rubber roofing; high-grade covering in rolls of 108 sq. ft. with nails and cement. 3 ply, guaranteed 12 years. Per roll \$2.10; 2 ply, per roll \$1.90; 1 ply, per roll \$1.35.

Corrugated Metal Roofing Per 100 Square Ft. \$2.50

Lot KR-4

28 gauge painted 2 1/2 inch corrugated overhauled siding sheets 5 1/2 feet long, per 100 square feet \$2.50.

Lot KR-5

26 gauge painted 2 1/2 inch corrugated overhauled roofing sheets, per 100 square feet \$3.50.

Lot KR-6

24 gauge extra heavy corrugated overhauled sheets, per 100 square feet \$4.00.

Don't Delay—Order NOW—TODAY!

HARRIS BROTHERS CO. Dept. KR-28 CHICAGO





NO MORE winters with fuel-wasting, unsanitary stoves. Real heating comfort guaranteed, big money saved on fuel, and moist, healthful, warm air in every room upstairs and down.

All this when you install the Mueller because it has proved its efficiency. Three big construction features, the "Big 3," insure perfect heating through *one register*. The Mueller is easily installed too, no ripping of floors for pipes, and once installed—a lifetime of heating comfort.

The "Big 3" Your Insurance For Better Heating

In no other pipeless furnace is found this same combination of construction features which have established Mueller superiority. Note them carefully; they are your guide to greater heating comfort and fuel economy.

1 Large and Properly Proportioned Register Face—
Insures delivery of big volume of warm moist air and rapid distribution of heat to every room.

2 Spacious, Unobstructed Air Passages—Permit unrestricted air travel in furnace and withdrawal of large volume of cool air from rooms while delivering an equally large volume of warm air into them.

3 Vast and Scientifically Designed Heating Surface—Every inch effective. Insures full benefit from fuel burned. Prevents hard firing, over-heated castings and big fuel waste.

Install your Mueller now. Enjoy the comfort and economy that thousands of other Mueller owners throughout the nation are enjoying.

The Mueller is adapted to every climate, burns any kind of fuel—hard or soft coal, coke, wood, lignite or gas and saves $\frac{1}{3}$ to $\frac{1}{2}$ on any fuel used. It is *guaranteed* to heat every room in your house comfortably and will keep your home healthfully ventilated with clean, moist, warm air.



Sectional View of Mueller Pipeless

Write today for free Mueller booklet which describes in detail the "Big 3" and other Mueller construction features. Also gives you money-saving facts on pipeless heating.

L. J. Mueller Furnace Co.

Makers of Heating Systems of all Types Since 1857

236 Reed St. Milwaukee, Wis.

BRANCHES

Chicago, Ill., Detroit, Mich., St. Paul, Minn., St. Louis, Mo., Minneapolis, Minn., Seattle, Wash., Portland, Ore.

DISTRIBUTING POINTS

Brooklyn, Syracuse and Buffalo, N. Y.; Philadelphia, Pittsburgh, Lancaster and Scranton, Pa.; Toledo, Ohio; Baltimore, Md.; Nashville, Tenn.; Kansas City, Mo.; Omaha, Nebr.; Aberdeen, S. D.; Salt Lake City, Utah; Pocatello, Idaho; San Francisco and Los Angeles, Cal.

MUELLER
PIPELESS
FURNACE

The Packers

[CONTINUED FROM PAGE 23]

that try men's souls. In normal seasons the cattleman can so adjust his business as to make an even and regular delivery of live stock, if the national shipping organization is in operation. But if grass is short and feed scarce, and the cattle begin to shrink and must be sold, the farmer looks to the packer to accept unusually large shipments of cattle to save the situation.

The farmer believes that the packer has inside information on beef requirements in all parts of the world. One way of winning the active good will of the farmer is to let him have all available reliable information of vital importance in his operations. The packers and other meat dealers might, with unquestionable benefit to all classes, take the farmer and the general public into their confidence a bit more than at present, with regard to existing food stocks and prospective demands.

If the farmers devise and put in operation the machinery for securing all needful information about the existing supplies of beef cattle, and for delivering these cattle to market in a steady, uniform stream, then the packers should give the farmers the benefit of any market news they may have which will enable the farmer to plan his beef operations intelligently. This program demands nothing from either side beyond enlightened selfishness. Will they do it?

IT IS not by oversight that I am leaving the consumer out of the matter at present. As a matter of fact, the possibilities in bringing the producer and consumer together have been greatly exaggerated. Not more than 10 to 15 per cent of farm products are susceptible of direct sale from producer to consumer.

The great staples such as cereals, sugar, cotton, tobacco, meats, hides, wool, fibers, rubber, etc., must be processed or manufactured before using. In the case of all these products the producer must make a contract with packers or with the owners of mills, factories, and elevators. These men in turn will deal directly or indirectly with the consumer. If the wheels of industry and the car of progress are to move forward, the farmer must be sure of market relations which will justify and encourage production.

And the farmer must have the benefit of genuinely competitive buying and a square deal at the stockyards. The Federal Trade Commission has charged that the buyers of the big packers often stay away from the yards until late in the morning to create the impression of a slack demand, and thus lower the price of cattle.

It has also been charged that the packers fix the price quite arbitrarily, and do not permit competitive bids, and that they "wire on" to prevent shippers from securing a better price if they withdraw their cattle from one market and ship to another. No conclusive proofs of these charges have ever been presented. But unfortunately a charge always leaves a trace of suspicion. The farmer is waiting for the packer to show clearly in deeds, rather than in words, that the charges are not true.

Late in December an injunction decree was entered in the federal courts by Attorney-General Palmer, under its terms the "big five" (Swift, Armour, Morris, Wilson, and Cudahy) have agreed to sell, preferably to live-stock producers and the public, all their interests in public stockyards, stockyard railroads and terminals, market newspapers, and also in public cold-storage warehouses, except as necessary to their own meat products. This action removes one large source of popular criticism of the packers. It remains to be seen whether it will affect the efficiency with which meat and meat products have been handled.

In the flood of verbal and written argument on the cause of the high cost of things we are fast becoming undignified, and even hysterical. Each class seems to think that the other classes are no better than they should be, and that if they would just behave properly the whole trouble would disappear. But what we need most is patience, coupled with judgment and common sense.

It might help a little if, instead of talking so much about the prevalent "unrest" we would call it by its proper but uglier name, laziness. By laziness I mean both physical loafing ("working not at all," in the words of Saint Paul) and mental inertia—unwillingness to think clearly or to think at all ("just busybodies" to use the other phrase of Saint Paul's arraignment).

Perhaps if the farmer and packer were left to themselves without so much unnecessary advice, they could more promptly adjust matters so as to eliminate friction and lack of confidence. For example, cold-storage houses have been in operation so long that many of us had taken it for granted that their purpose was understood. They serve to hold and preserve huge quantities of perishable products which otherwise must be consumed at once or go to waste. We thus make these products available over a wider area and a greater period of time.

Just stop to consider a few facts and figures on cold storage: There are in the United States 402 public cold-storage warehouses with a capacity of 163,000,000 cubic feet, 281 private warehouses with a capacity of 14,000,000 cubic feet, 266 combined public and private warehouses with a capacity of 46,900,000 cubic feet, and 438 packing houses with a capacity of 239,000,000 cubic feet, or a total of 1,387 houses with a total capacity of 463,000,000 cubic feet, of which 112,300,000 cubic feet is freezing space (29 degrees F. or below) and 350,700,000 cubic feet cold-storage space.

Now, 50 per cent of the annual egg production occurs from March to June. Obviously the only way to equalize egg distribution is to store some of them during the months when the hens lay most eggs. Again, the annual production of poultry in the country is 1,700,000,000 pounds, of which not more than three per cent is ever in storage at one time. The total quantity of meats in cold storage on June 1, 1919, was 1,348,000,000 pounds, of which 65 per cent was in process of curing. The total amount in storage was only seven per cent of the annual consumption of meat in the United States, which is twenty billion pounds, or fifty-eight million pounds daily.

The following comparison of storage holdings is interesting:

	August 1, 1918	August 1, 1919
Creamery Butter	88,786,342	122,771,843
American cheese	42,456,557	61,998,676
Eggs (cases)	6,523,942	7,784,452
Frozen poultry	18,344,155	49,201,540
Frozen beef	172,321,920	162,638,789
Frozen pork	87,094,543	155,263,362
Frozen lamb and mutton	3,057,493	7,278,826

There was thus a considerable increase in the storage holdings of all these commodities except beef. The farmers were running "on high" up-hill and down during the war. They were producing more than ever before. Storage holdings were of course increased in anticipation of greater export shipments and of increased consumption in this country as a direct result of high wages. In other words, there were the usual and also certain important special reasons for having large quantities of food in cold storage on August 1, 1919.

But when the actual figures were published, the consumer began to shout in an excited manner about "hoarding," "food monopoly," and "profiteering." There were demands that all this food should be seized, taken from cold storage, and sold. After having laid up the usual supply of food for winter use, we were asked to remove the whole winter store and consume it at once. Even the red squirrel knows better than that, and fortunately the advice of those who took counsel of the red squirrel prevailed—our winter's food supply was saved.

NOW, the farmer knows what cold-storage warehouses are for, but he has a question on cold storage which must be answered authoritatively in the near future. He is asking whether the cold-storage man is playing squarely in buying the farmer's products when they are cheapest and manipulating the high price at a time when the farmer has nothing to sell. And the cold-storage operator will soon be forced to show just how this matter lies. He will have to lay his cards on the table. For example, Henry Krumrey, president of the Wisconsin Cheese Producers' Federation says:

"Cheese prices are made by the Cheese Board at Plymouth, Wisconsin. Farmers get about 16 cents a pound when cheese retails for 35 cents. Packers control and market more than 75 per cent of the Wisconsin cheese. When the board sets a summer price of 13 cents and a winter price of 26 cents, there is evidence of price

[CONTINUED ON PAGE 79]

The Frog Ferry and the Bat Airship

How some squirrels crossed the river in an up-to-date fashion to gather nuts

By Frank A. Secord

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Illustrations by Edwina Dumm



Squirrels were whizzed over the river in a jiffy on the backs of the big bats

A FROG sat upon a bit of wood which was held against the shoreline of the river by an eddying current. The frog was well satisfied with himself, for the sun shone warm upon his back, which was almost always cold. The frog, however, wished to do something. He was thinking that as long as he had lived near and in that river, he had never done anything to be proud of.

"True," he was saying, for just himself to hear, "I did what nobody but a frog can do. I changed myself from a wriggling brown tadpole with a tail, to a green frog with no tail at all. That's something, but nobody saw me do it. Croak, croak!"

"Why not get into some business?" inquired a very small voice nearby, and the frog, on looking up, beheld a squirrel gingerly dipping one foot and then another into the water at the river's edge.

"What can I do?" the frog inquired.

"Well, on the other side of the river, on yonder island, are a lot of fine walnut, hickory, and oak trees. I am sure there are plenty of nuts there. I have been trying to find out some way of getting over, so I can increase my store of goodies for the winter. I cannot swim, and I cannot wade through the deep water. Anyway, I cannot hear wet feet."

"Well?" grunted the frog.

"Start a ferry! Start a ferry!" cried the squirrel. "I, for one, will patronize you. Back yonder, in the woods where you can never go, are oodles of hugs and gnats. If you will ferry me across the river and back, I will promise to get you more hugs

to eat than you ever saw in one pile in your life."

"That would be worth while!" Mr. Frog gleefully cried. Mr. Frog also knew that, while he would gain plenty of food, he would have something exciting to do—just what he wished.

"You trust me and I will trust you," the squirrel was told. "If I take you over and bring you back safely, you pay me; if I get you drowned, you do not need to pay me one hug, even."

The squirrel rubbed his tongue over his lips a moment and then said:

"That is all right; but if you are going to drown me I prefer remaining on this side and take chances on getting enough nuts for the winter."

The frog, for answer, hopped to the ground, pushed a forked stick to the water, placed a clamshell in the fork, and invited the squirrel to get aboard.

"I'll take you over without so much as wetting a hair—unless, of course, a fish happens to splash a few drops on you with his tail as we pass," Mr. Frog assured his passenger.

Well, the trip was made safely. Mr. Squirrel explored the island and found things as he expected. There were thousands of nuts lying on the ground under the trees, and not a squirrel in sight to get them. He was ferried back over the river, and then Mr. Frog spent an hour or more bringing nuts across—nuts that the squirrel carried to the shore of the island and piled there handy for the ferryman to get.

True to his promise, Mr. Squirrel paid the frog, who found that he could eat without the trouble of jumping after hugs and gnats.

"A little pleasant work that is also fun does the trick!" Mr. Frog told himself as he gorged his stomach.

In the course of a few days the squirrel, who had his home overflowing with fine walnuts, acorns, and hickory nuts, strolled about idly. Other squirrels asked him why he worked no more.

"Oh, I do not have to," said he.

"Do not have to! Fellow, do not depend upon others to feed you during the winter, for you may as well understand right now that there will be no charity for a lazy squirrel," he was told.

When it was found that the squirrel who hired the frog for a ferryman would not work, it was rightly decided by his friends that there must be a reason; so, while the wise fellow was away from home one day, his neighbors went to his nest to see. What they found made their eyes bulge.

"He must be a thief," someone said.

A committee was appointed to visit every squirrel nest in the woods to see if they had been robbed. Nobody had missed a nut.

"He must have hidden a lot of nuts last season, and so he does not have to work now," it was suggested.

However, the nuts in the wise squirrel's nest were new and sweet, as was discovered after sampling them, so the owner of the nest was neither a thief, a laggard, nor a crook.

"Well, what is the answer to this?" the committee asked of other squirrels.

"He has found a way to do magic," somebody said; and then all agreed to take turns about at watching the wise squirrel, to the end that he was finally discovered taking a ride across the river to the island. All was now plain. Often every squirrel on the mainland had longed to go to the island, but there was no way.

In the course of a few days so many frogs were doing ferry duty, and so many squirrels were catching bugs and gnats in the woods to pay for their journeys, that the other hug-eating folk began to suffer for food. Bats complained, and night birds fluttered everywhere almost in vain throughout whole nights in search of bugs.

One squirrel, who was slightly crippled, having fallen from a tree when very small, hurting his back, was cornered by some of the bats one evening, as he walked from the river to his tree with a load of nuts.

"What do you do with the hugs you catch?" inquired the bats.

"That is my business," the squirrel answered, hohbling on.

However, the bats would not let him go. They barred the way and threatened him, but he would not tell his secret. When he was finally promised that his humpback could be straightened, and that the bats could have this done, the squirrel confessed and told all about the ferry of the frogs.

"The next time we see the old woman of the woods who does magic we will have her straighten your back," the bats said as they left, laughing at their trick.

That evening, as some frogs were eating the hugs brought to them by the squirrels whom they had ferried across the river, they observed a number of bats making visits to the river's shore. Each time that a bat came he did more than dip to get a drink—he paused in the mud, and when he flew back to the woods he was seen carrying something on the tips of his wings.

"Wonder what they are up to?" a frog asked a companion, as he munched a beetle.

"Maybe they are trying to play mud swallow and are building homes."

The truth was, the bats carried black mud to use for paint.

Well, when morning came, on every tree in which lived a squirrel, there was found hanging a sign printed on a big, dry, yellow leaf fastened by a bit of cobweb. The sign read:

Quick route to the island.
Squirrels, investigate!
No danger of drowning!
Ten trips made while the ferry makes one!
Price, 75 bugs a trip.
Inquire at the cave by the cliff.
COMMITTEE

"What does it mean?" many a squirrel asked of a neighbor.

"It may mean anything, but it is worth looking up," another said.

Accordingly, that night, just as the sun grew red over the trees, a crowd of anxious squirrels visited the cave. They were invited in by a granny owl, who was so old that she wore milkweed pods, with tiny

holes punched in them, over her eyes to keep out the light.

"Step right in!" squeaked Granny Owl.

The squirrels didn't step—they ran, so anxious were they to find out what the signs meant.

The cave was very dark, but voices began to dicker with the squirrels, who eagerly answered each question asked them; and after half an hour the squirrels ran, tumbled, somersaulted, and hopped home, laughing until their sides ached.

Next morning the frog ferrymen waited at the river near their rafts for squirrel customers to come. The sun rose high and hot, but there was no sign of a squirrel. "What has happened?" the frogs inquired of one another.

"Nobody could answer, so the frogs kerplunked into the water, crawled out, and



The frog, for answer, hopped to the ground, pushed a forked stick to the water, placed a clamshell in the fork, and invited the squirrel to get aboard

kerplunked in again to pass the time and to show their impatience. They sat on logs and on the river bank and croaked.

"Croak, croak, croak!" the frogs answered.

Evening came, and to the surprise of the frogs more than a hundred squirrels arrived on the scene.

"Ferry?" cried the frogs eagerly, each pushing his raft into the stream.

"No!" sang out the squirrels in reply.

The rafts of the frogs tugged and chugged against the shore of the river, and each frog ferryman had all he could do to keep his raft close enough in order that a squirrel might crawl aboard if he wished. The night breezes were coming up strong with whispering voices, and the waves caused the green-hatted ferrymen much trouble keeping their bodies from being dashed against the sands.

Presently, above, was heard a whirring noise, and one hundred hats settled to the ground. With them came Granny Owl piping shrilly:

"All aboard for the island! An airship will leave every five seconds for the nut groves on the other side!"

The bats kept chanting, as they left, one at a time, carrying a squirrel:

Over we go, and back we come
With plenty of nuts to fill your home!

Squirrels were whizzed over the river in a jiffy on the backs of big bats. Before darkness settled, so that squirrels could no longer see to gather nuts, the work was done.

The frog ferrymen sat alone, croaking at their ill luck.

From that time on, there were plenty of bugs for the hats, owls, and other night prowlers of the woods, and the frogs had to catch their own food or starve.

"These are modern times, and I am glad I have lived long enough to see airships at work," Granny Owl told Grandpa Owl that night as the two feasted upon their share of the pay received from the squirrels.

And everybody knows that the frogs now really do have something to croak about.



Accordingly, that night, just as the sun grew red over the trees, a crowd of anxious squirrels visited the cave

Where they eat for a week, awaiting the inspiration to begin their Medicine Elk Ceremony



"Making Medicine" With the Blackfoot

I

IN THE summer of 1915 the Reclamation Service of the Interior Department secured a motion-picture record of the Medicine Elk Ceremonial of the Blackfoot Indians of Montana. This is the only photographic record of this feast, which is merely a prolonged prayer for the sick of the tribe, and never will there be another record made, for that summer witnessed the last performance of the rite; now it has passed into history.

The ceremonial for generations has been a sacred one with the Blackfoot, and in ancient days was performed by them annually for the benefit of the sick of the tribe. But of late years, owing to the fact that the tribe has become very poor and has been sent to the reservation, the ceremonial has been ignored. In fact, up to the summer of 1915 it had not been performed for ten years.

II

MANY TAIL FEATHERS, the oldest medicine man of the Blackfoot tribe, was the only member qualified to preside at the function. He was ninety-seven years old, and owned the medicine elk pipe. No Medicine Elk Ceremony can be held without this pipe, and the tribal laws decree that only the medicine man owning it can preside, unless he relinquishes the pipe to some other member of the tribe who is qualified to preside. And on this occasion, as Many Tail Feathers had not performed the ceremony for more than ten years, there was no member sufficiently familiar with the ritual to preside. In January, 1916, Many Tail Feathers passed away to his happy hunting ground, and thus closed the Medicine Elk Ceremonial.

But not before our Government succeeded in recording the rite in motion pictures. The ceremony itself was a great prayer by the tribe to the sun god for their sick ones, and it was made in the same spirit in which Christians visit a sacred shrine.

The bundle of skins constituting one of the indispensable properties for staging the ceremony. The Blackfoot in the center is sorting them, praying aloud as he discharges the ritual duty



III

AT THIS time they held great feasts, but since they were no longer allowed to kill deer, elk, and the like, as in former days, they used beef. Previous to the ceremony they came from all parts of the reservation at the call of the medicine man. They came in little bands, camping in groups within a radius of three and four miles of the spot where the ceremonial was to be staged.

A week in advance of the date set for the feast they made the "medicine." This task was performed by one of the younger medicine men, usually an understudy of the chief. When the accompanying pictures were made, Medicine Own attended to this feature; he was the official medicine maker.

The movie photographer was kept busy running here and there for his "set-ups," for without notice the stages of the prayer would be moved by the Blackfoot



Here is a little side issue which the photographer stumbled upon and quickly recorded—a prayer on the shore of the lake for safe passage of the tribe

IV

THE making of the medicine consisted in wrapping the sacred pipe in the skins of birds and animals, each skin smeared with the medicine before being wrapped. The pipe projected from either end of the queer bundle. Then the bundle was placed in the ceremonial lodge by itself, and no one save the chief medicine man was allowed to enter the lodge for several days in advance of the rites. Then the tribe assembled sat stolidly awaiting the proper inspiration for the beginning. Often this wait was a week or more in duration.





Day after day the Blackfoot chiefs and braves seemed to idle about their tipis before they made any move to begin the rite. But they were waiting for the moment when their chiefs agreed all things in their minds and hearts were ready. Such is the way of the Indian



This Blackfoot brave and his sweetheart have stolen away from the Medicine Elk Ceremonial to carry on a little ceremonial of their own. Love-making is a solemn and serious affair among the young bucks and their squaws-to-be, and they spend much time wooing in such majestic scenes as this

V

WHEN this moment arrived at the last performance on the shores of Two Medicine Lake, Montana, the government photographer was several miles away. He was hastily sent for. But when he asked permission to record the scenes he was flatly refused. No alien ever had been allowed to witness the ceremonial. The chiefs glowered at him and held great pow-wows among themselves as to what should be done about the matter.



Blackfoot brave and his squaw and papooses come to attend the ritual

VI

FINALLY, however, the Blackfoot offered to take him into the tribe as a full member. He was conducted into a lodge, his face painted with ochre, and a blanket wrapped around him. This he was charged to keep always. They named him Sic-a-mi-o-ts, meaning Owner of the Black Horse.

At this time Mrs. Mary Roberts Rinehart was visiting the tribe, and also was named by the Blackfoot, who had heard of her early trips to Europe during the war. Accordingly they named her Pa-to-mach-in, Woman Warrior.

VII

IMMEDIATELY following his adoption, the photographer began to study their sign language, the better to understand the rites. When the moment arrived, the ceremony began and the photographer began to crank.

The chiefs and medicine man entered the lodge wherein reposed the pipe in the bundle of skins. The squaws of the select followed, and seated themselves behind their men. The chief made a long, impressive speech to his tribesmen.

A scene at Two Medicine Lake, where the ceremony was performed



VIII

THEN a skin was peeled off the bundle, bucks and squaws rose to their feet, and stood in line, bucks first. They danced out of the lodge, circled the whole encampment, came back, circled the lodge, re-entered, took off another skin from the bundle, and repeated the ceremony until all the skins had been removed.

Then the sacred pipe was filled with wild tobacco—kanickanick—and was passed around, each man taking a puff. Following the ceremonial was a great jubilee of feasting and dancing. And thus ended for all time the Medicine Elk feast.

IX

IN FORMER days the Blackfoot always had their medicine lodge for this ceremonial on the shores of what is now known as Two Medicine Lake, Montana. One year they made a treaty with the Flatheads, who were not having a very great success with their lodge ceremonies, and who, upon invitation from their new allies, came to the same lake, and there established their lodge. Hence the name—Two Medicine Lake.

Blackfoot on the way to the ceremonial, camped along the trail in the mountains



Buddy the Mascot

The story of a very small boy who had a very big time—and then got a spanking for it

By Meade Minnigrode

BUDDY stood before a tree in the middle of a broad space of grass, gravely inspecting a brightly colored poster.

Buddy was ten years old. He was very freckled, his hair was straw-colored, and his eyes were blue. He stood resolutely on two rather grimy bare feet. Seen from in front he appeared to be clad solely in a large pair of blue overalls. Seen from the rear, it developed that his costume was further enriched by a faded, sleeveless jersey. He had a nose which continually pointed skyward, he had a mouth set in curves of the gravest solemnity, and his gaze was one of constant wide-eyed speculation. He rather looked like an angel. Of course, he was not an angel at all, but people often mistook him for one. Actually Buddy was a business man, but we must not pry into the nature of his business until we know him better.

The space of grass in which he stood was enclosed by ivy-clad Gothic buildings in stately rows. In one corner a spire rose above the trees. At the other end a vaulted passage led to a great bronze gateway. Across the grass, like cracks in a windowpane, ran little stone-flagged paths. Along the four borders of the grass there was a fence with square, flat-topped posts and double wooden rails. The street cars that came to this place were marked "Campus."

All these things were very familiar to Buddy, and he thought very little of them. But the posters fascinated him. Every year, as far back as he could remember, along in June, these posters had appeared. Most of them bore numerals in tremendous type, and the word "Reunion." One by one, in the night, they blossomed forth, and Buddy knew that they signified the coming of joyous throngs, and the blare of bands, processions and banners, and the costumes. Ah, those costumes! Green and yellow clowns, and pigtailed Chinamen, and Uncle Sams, and firemen, and sailors, and once a roaring, dancing crowd of singing pirates, with a ship that ran on wheels, and a cannon. There had been joy enough to last a year at the sight of them. And then there was a day when all the bands played at once, and they all marched away to a field somewhere. And in the late afternoon, with the sunset at their backs, they all came tramping home through the dusty, crowded streets, and one was able sometimes to march for a block or so with one of the bands, and even pick up a hat or a sword. And if they all laughed and said, "We won!" as they went by, it meant that in the evening there would be torchlight parades and fireworks on the broad space of grass.

Buddy had not the faintest idea what it was all about, but it was extraordinarily pleasant to watch those laughing fellows in their costumes every year, and the brass bands made him feel delightfully jumpy inside, so that sometimes he almost forgot his business.

But to make things absolutely perfect he understood that they must win out there at the field, because only then would there be fireworks. Last year, and the year before, there had been no fireworks. But this year—oh, this year, there must be fireworks. They were eminently desirable for their own sake, and after all it is per-

missible to be an idealist as well as a business man. At the age of ten sometimes a brass band will interfere terribly with one's business.

So Buddy scanned the posters as though hoping to find some promise of skyrockets among them. And suddenly he noticed that the broad space of grass was being invaded from all sides. There were shouts and outcries, loud peals of laughter, and the sound of feet running along the stone-flagged paths. A medley of bright colors flashed by in the sunlight. The costumes

corner. They were all far too busy laughing at each other to pay any attention to him. For a while they did nothing but sing and stamp their feet on the wooden floor. Once or twice Buddy tentatively stamped his own to see what fun there might be in it, but his little bare soles made no noise, and it seemed foolish to him. He hoped they would say something soon about the fireworks.

Then a great strapping fellow got up on the platform, and they all yelled like mad. The din in the echoing room was terrific, and Buddy clapped his hands for sheer joy at the noise. The big fellow waved his arms at them, and they all began to shout something very fast. Buddy knew what that was. That was a cheer. They always cheered when they had fireworks. Buddy came out of his corner and went to the edge of the platform. The fellow up there had begun to talk.

"Come on now," he was shouting; "got

Buddy could not understand the song, but he knew when they came to the Bang! Bang! Bang! part and stamped his feet. The crowd went wild. Buddy went right on without a stop, and they began again good-naturedly. Three times through they sang it for him, and then they stopped, out of breath. Buddy looked embarrassed. He was still waving his cane, but they had had enough. He looked at them hopefully—wistfully, had he known the meaning of the word. It was all over. He looked back at his friend and then again at the class. Suddenly, in the lull, the little quavering voice rang out. "... Bang! Bang! Bang! And we'll fire off the fireworks to-night!" Buddy was singing the class song.

THE Highlanders went crazy. They stamped their feet, they roared, they cheered. Buddy felt himself lifted up in strong arms and perched on somebody's shoulder. It was his smiling friend on the platform.

"How about it, boys?" he shouted. "The kid's a peach, and he says we'll have the fireworks to-night. Is he our class mascot?"

"He is!" came the thundering answer.

"Kid's a wonder," said the big fellow to his friend. "We'll take him along and give him the time of his life. He'll be tickled to death."

They set him down again, they gave him a cap, they gave him a cane, they all patted him on the back.

"Not scared, are you, kid?" asked his friend. "Want to see the game? Come out with us with the band and lead the song? Come on then! Stick close to me! If anybody asks who you

are, just say you're the Highlanders' mascot."

"Sure, mister," said Buddy, and put his hand in the other's big palm. They were swept along in a flood of tartans and little ribboned bonnets. Outside some bagpipes were playing "The Campbells Are Coming."

Buddy smiled. At that moment he looked more than ever like an angel.

When they reached the open space before the building the costumes were already assembling for the march to the field. Each band formed a nucleus for an ever-widening circle. From the center of each group a great gold-embroidered banner swung to and fro while marshals sought to create order in the throng. "Four abreast!" seemed to be their slogan. Each band was playing as loudly as possible, and each band was playing a different tune. Also, all the bands were playing simultaneously. The general effect was one of continuous cacophony not entirely displeasing to the ear. Buddy found it very stimulating. Of course, the subtleties of the Puritan band playing "In My Harem," and "Onward, Christian Soldiers!" chanted by the ever hilarious Turks were lost on him, but the grand ensemble filled his soul with delight. One only needed to look at him to know that this was so.

The Highlanders cheered him as he went by, and told each other what a good time the kid was having. Other classes got wind of what was going on, and reviled their leaders for having failed to supply them with a similar attraction. For, when all is said and done, a little barefoot boy in blue overalls at the head of a procession is an attraction. The Highlanders with their pipers, and their song, and their mascot, were the hit of the occasion. The Jockeys were quite peeved about it, for they had thought to center attention on themselves by producing a [CONTINUED ON PAGE 52]



He stood there solemnly waving his cane, a lonely little figure in his bare feet and overalls

had come! Buddy abandoned the posters and transferred his attention to the new arrivals. They were swarming in now. In twos and fives and twenties. Here a long line of clowns were dancing around in a ring. Over there a row of jockeys were running races on little wooden horses. Some hilarious Turks were riding madly up and down in a delivery wagon. At the far end a gang of convicts were playing leap-frog with some very unorthodox Puritans. Somewhere in the distance a band began to play.

BUDDY very carefully stood on his head in the grass. The posters were there, the costumes had come, bands were playing—and he was only ten years old! Then he sat down rather suddenly, arms and legs apart. This year there must be fireworks, and there was that business of his to attend to.

It was then that he saw them for the first time. They were Highlanders with splendid tartans and funny little caps with ribbons. Their bare knees shone in the sun, and they carried jaunty little canes. It seemed to Buddy that they were the finest costumes he had ever seen. They had just arrived, and were all tramping by, singing something at the top of their lungs about "... Bang! Bang! Bang! And we'll fire off the fireworks to-night!" Buddy clapped his hands together. This was a happy omen. These fellows knew all about it evidently. Buddy cast a last appraising look at the hilarious Turks, then pattered off after the Highlanders.

They were all filing through a doorway into a big room full of seats, row after row rising from the floor, facing a platform and a blackboard. Buddy had never seen a room like that before. As the last of them passed in, Buddy managed to squeeze himself in after him and concealed himself in a

to learn this class song. Got to have fireworks to-night!" Buddy began to clamber up on to the platform. "Haven't had any for two years, not since we graduated. This is the big year and this is the big song that's going to do it. Every time we sing it out there this afternoon we're going to make a run—"

He was interrupted by the crowd.

"Hey, who's the kid?" they were shouting at him. "Throw him out!" "Beat it, kid, beat it!"

The big Highlander looked down and saw Buddy standing beside him. Such a funny little boy in blue overalls, and very frightened too he seemed in the midst of the din.

"Make him lead the song," the crowd was demanding, and the big fellow laughed.

"Hello, kid!" he said. "Don't get scared. Want to lead the song?" He had nice eyes and he was smiling. The big hand on Buddy's shoulder was gentle. Buddy smiled back at him.

"Sure, mister," he said; "an' then you'll tell about the fireworks?"

"Never mind about the fireworks," the other laughed, "they'll come later. Got to learn this song first. Go on, you stand up there and lead them!"

He put a cane in Buddy's hand and pushed him to the edge of the platform.

"There you are," he said. "You just wave the cane and make them sing with you. Come on, boys, watch the kid! All right, one, two, three—"

They began to sing and the chorus came swelling up to him as he stood there solemnly waving his cane, a lonely little figure in his bare feet and overalls.

The big fellow turned to a friend on the platform.

"Look at the kid," he said. "Having the time of his life. He'll talk about this for days. Cute-looking youngster."

The Hoover lifts the rug from the floor, like this—flutters it upon a cushion of air, gently "beats" out its embedded grit, and so prolongs its life



In the soft shadings and delicate tracings of a fine rug lies its call for admiration. The maintenance of these charms is an important function of The Hoover. Rapidly its electric sweeping reveals anew the colorings dimmed by soot, and brushes straight any nap disarranged by heels. At the same time it beats out all destructive embedded grit, collects stubborn, clinging litter and thoroughly suction cleans. Only The Hoover does all this. And it is the largest selling electric cleaner in the world.

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Panics often follow great wars! Conditions to-day are abnormal. Are we going to weather the approaching storm? Herbert Hoover knows the situation as well as any living man. You can pretty well bank on his judgment. He not only produces new evidence—but also gives you a new angle on familiar things. His advice may mean much to you—read it in the March WOMAN'S HOME COMPANION.

The family man doesn't throw bombs!

Calvin Coolidge stands four-square for Americanism! "Protection for the home" is his motto. You'll like his vigorous message this month. And Bruce Barton has a fine article on Governor Coolidge, the "Silent Man on Beacon Hill."

Should a man marry when his luck's out?

What were they to do? He was just back from France, his old job filled, forced to work at a salary greatly reduced. With his case in hand, Anna Hillyard weaves a fascinating story. She finds the way—you can call it love, or nature, or just common sense—perhaps it is all three.

When there's a bully in the home—

What should the wife do? Richton Drexley had three faces—pleasant at business, fascinating in society, and furious in the home. She reconciled herself to his overbearing, domineering ways for a time. But when his venom reached her little son, all the mother in her soul rebelled. You will like the way Eleanor Hallowell Abbott handles this situation in her new novel, "The Furious Man and the Woman Who Got Tired of It."

Every woman should know her own back!

Times change, and so do backs. A woman used to express scorn by turning her back, but this spring it is to charm. The back tells the best story of the spring fashions. They all accentuate their newest features in the back. You must wear your back to advantage. Read these latest fashion hints, and appreciate your own possibilities for spring.

The March

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WOMAN'S HOME COMPANION THE AMERICAN MAGAZINE
FARM AND FIRESIDE COLLIER'S—The National Weekly

How to Get the Most for Your Money When You Put in Plumbing

By William Hutton

Of the Hutton Brothers Company, Winstead, Connecticut

OF COURSE, I am a plumber, in business to make money. But as FARM AND FIRESIDE covers the whole country, and as a very small percentage of its 650,000 subscribers live near enough for me to make it likely that I will reap a fortune from the publicity I get from this article, I guess there's no objection on that score.

All I want to do here is to tell you how you can get the most for your money when you buy plumbing for the farm home, more especially for the small farm home. Also I want to tell you why I believe it is a paying investment.

The idea came to me on reading some articles on the building of small farmhouses. The plans, as a rule, are admirable. They offer well-arranged homes and suggestions for building them at the minimum cost, but almost always there are details in the plumbing arrangements that show insufficient study of the problem. Perhaps it's only the man who really installs the plumbing who sees the faults in the design and

dow, but, if possible, along a wall at right angles to it, so that the light will be unobstructed. If placed in front of a window it is hard to prevent pipes from freezing, and if the sill is low you cannot use the pattern of sink with the integral back. This style is the most attractive and easily kept clean, for there are no joints in it to collect grease and other matter. Then, also, try to arrange it so that the waste pipe from it will be within as short as possible a distance of the main soil or waste pipe.

If you can spare a room on the bedroom floor for the bathroom, locate it there. Don't forget that the bathroom should be planned with the needs of old people and children in mind. If they have to come down-stairs in the dark to use it, much of its comfort and convenience is lost, especially in times of sickness.

A bathroom can be arranged so as to occupy a very small space, but this detracts from the appearance and also from the convenience in using it. If only a small room is available, study the location

Who Says There's No Poetry in Plumbing?

"IF THE rest of my life's to be spent on a farm, I pray to the Lord that the house will be warm; that when I come home at the hot noontime hour I'll be able to strip and get under a shower; that my wife will have washtubs and water galore to lighten her labor and shorten each chore; that my toil-worn old body won't squirm in each kink as I work on a rusty old pump at the sink; that my city relations won't look with disdain on my household equipment and make me explain that back on the farm there's not enough wealth to give decent comfort and culture and health to the hard-working farmer and toil-stricken wife, who goes uncomplainingly all of her life; that silos of concrete and barns of good tile are far more important, and 'tis not worth while to spend money on bathrooms and laundries, and that the place for real comfort is their own city flat."

who knows how to rearrange the work so as to get better results with less labor and a smaller amount of piping.

Suppose your house is an old one, and that you now have only a well in the yard or in the cellar under the house: Find out how much water it will flow; that is, measure the amount of water you can draw without lowering the water level. Keep on doing it until you see the water going down below a mark, and you will have a reasonably accurate knowledge of the amount of water you have for all purposes. Then if you want to provide a water supply to your barns as well as to your house you can buy equipment able to handle the amount of water available.

If there is any possibility of the well being polluted by seepage of drainage from barns or other sources of pollution, either look for a new source of supply or remove the danger by proper drainage arrangements. Don't take chances. A competent plumber can apply a color test which will remove all doubt if pollution is suspected.

If there is a spring which will supply water to your place by gravity, pipe the water from it. It will provide a more certain supply, and you won't have to use mechanical means of raising it. If you cannot get it to run to your place by gravity, it still may be worth while bringing it in. Gasoline engines and pumps are moderate in price.

You know best what you need for watering your stock and taking care of your dairy requirements. But plan the location of your troughs or hydrants so that the pipes will be protected against freezing, and so that they may drain freely without making a puddle around them. If they must be outside, use anti-freezing hydrants which drain the water back after using, to a point lower than that to which the frost will penetrate.

When you look for a place to locate your kitchen sink, consider these points: It should be far enough away from the stove so that you can work at it in comfort. It should be located, not in front of a win-

of the fixtures carefully. From the point of economy and ease of installation the most important thing is to locate the three fixtures, closet, lavatory and bath tub, so that the outlets will be as close together as possible.

First determine where the soil stack must come up. This can be on the outside wall if it is more convenient to have it there, for it is empty excepting at such times as water is discharged from a fixture, but water pipes should never be run on an outside wall in cold climates. So keep this in mind.

Then locate the closet as near to the soil stack as possible. The pipe connecting it to the stack is four inches in diameter, and if it is necessary to cross joints to reach the pipe it will mean extra expense in inserting headers, and also a weakening of the floor structure. When you place the tub, turn the outlet end toward the soil pipe, and you will shorten the waste and supply lines by five feet.

Sometimes, when an old building is being remodeled, it is found that the space between floors and ceilings is very limited, owing to the old-fashioned construction which had split logs for joists, and these laid somewhat close together. In this condition it is possible, if the room is over a pantry or other chamber which would not have its appearance spoiled, to hang the pipes under the ceiling and then cover them by a false ceiling made of canvas, metal, or pulpboard.

Another advantage of keeping the outlet ends of the fixtures close together is that in most cases the water-supply pipes can be run along the baseboard. If this is done with iron pipe, and they are carefully fitted, a neat appearance is secured, and the pipes are open for inspection and repair, and are kept from freezing much easier.

If you can spare the room, by all means install laundry trays. They save much back-breaking work, and do away with the necessity of lifting water out and in. Buy

[CONTINUED ON PAGE 57]

Better Babies

AT LAST I am writing to tell you how much my husband and I appreciated your letters. My husband read them as eagerly as I did, and I am sure it is owing to them that we have such a good baby girl. Everybody remarks how good she is. She hardly ever cries, and she sleeps all the night through. I followed your letters as closely as possible. It was not always possible for me to take all your advice, as I am a farmer's wife and I am kept pretty busy; but if I ever have another baby I will try to follow them to the letter.

I know your letters took away all fear of childbirth and the nervousness that sometimes goes with it. At the critical moment

my doctor failed me; on account of the number of patients he had attended that day he would not take care of my case. We had to try five different doctors before I managed to get one, but I did not feel nervous about it.

My baby is very strong, and I think she will have two teeth soon. She has never had the colic.

Will you please send me the letters for the first three months from the Mothers' Club? Enclosed find fifty cents to cover postage. I shall look for them as eagerly as I did the others.

I thank you for your kindness and helpfulness. Mrs. E. C. Z., Pennsylvania.

I FEEL that I must tell you what a fine, sturdy specimen my "better girl" is—thanks to your timely advice. She was just measured according to the Government's requirements, and proved to be above the standard in both size and weight.

This fact would be more wonderful to you if you could understand what a poor, sickly little thing she was at first. At three months she weighed just seven ounces more than she did at birth. Our doctor despaired of saving her life. But I started her on the bottle, and followed your advice as to hours of feeding, outdoor naps, etc., and now she is not only perfect in health, but her disposition is the marvel of our town. She is practically the only baby in town who is not rocked to sleep, fed everything, and amused constantly.

She takes two long naps a day, both outdoors, and her waking hours are spent playing with her simple toys, alone. She



"Outdoor life made us like this!"

needs no one to amuse her. Had you not taught me the modern way I should probably be her slave, as mothers used to be. Mrs. V. T. R., Utah.

DEAR FRIENDS: Please allow me to address you as such, for I feel that any folks who take the interest in mothers and babes that you do are truly friends.

I have been slow in writing to tell you how

Beginning early

I appreciate every line of advice you have given, but living on a large farm, and busy so much of the year, I hardly have all the time I should like for correspondence.

At present I am in Omaha, waiting to enter a lying-in hospital the latter part of this week or first of next. I anticipate coming through all right, with a strong, healthy baby, due much to the splendid help you have given me.

Your booklets alone are worth more than the cost of the whole course, while the personal letters have been such a comfort to me, for I was so despondent in the beginning—not that the baby was unwelcome, but I feared that all would not go well and I would leave my other two children just entering the adolescent age when a mother is needed most. Through your letters I have tried to overcome this, knowing the ill effect it might have on the unborn babe.

Will have someone send in my card as I wish to still have your help.

Thank you so much.

Mrs. A. P., Nebraska.

I INTENDED to write to you long before this to thank you for your wonderfully

helpful letters and bulletins which I received month before last and last month. My, but I do appreciate them, for the little visitor which we expect is our first, and I just literally "eat up" every bit of advice in your letters, for I am so anxious to do my part well, both before and after the precious little mite arrives! And you give one such splendid high ideals and thoughts!

I have shown your letters to all my friends, for their optimism and beautiful spirit are helpful to all. Mrs. W. J. T., Wash.

What the Better Babies Bureau Is And how to secure its help

THE EXPECTANT MOTHERS' CIRCLE: Any woman eligible may become a member, receiving each month a letter of advice on the care of herself and the preparation for her baby. Several practical little pamphlet circulars showing designs for maternity dresses and a common-sense layette are some of the helps sent with the letters. No matter at what period you enter, everything from the first month will be sent. No mention of the Better Babies Bureau is made on the envelopes in which the material is mailed. Enclose a self-addressed envelope with Fifty Cents in stamps, for postage, and state what month you expect your baby.

THE MOTHERS' CLUB: Every mother of young children is eligible. Pamphlets, together with monthly letters of instruction on the care and feeding of babies under one year of age (covering such subjects as colic, constipation, weaning, teething, etc.), will be sent to any mother who sends Fifty Cents in stamps and states the age of her baby. There are also leaflets giving diet lists, and other helps for babies from one year of age to three years. This literature is all included in the Mothers' Club's monthly service, but if the letters are not desired the additional literature will be sent for Ten Cents. A self-addressed stamped envelope will bring a prompt reply to every inquiry. Address all inquiries to

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HAS THE GREATEST SALE OF ANY BRAND
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Buddy the Mascot

[CONTINUED FROM PAGE 48]

mounted phalanx and having their banner taken to the field on horseback, but this mascot business went one better. Their offering was purely zoological, whereas the Highlanders had basely provided themselves with a "human heart interest" which was certain to find its echo along the crowded sidewalks.

Buddy's friend showed him where to stand—out in front, ahead of the band, ahead of the banner and its escort, at the front of the whole procession, for the Highlanders were first in line. They tilted his bonnet over his right eye and showed him how to carry his cane. Someone took off his sporran and hung it around Buddy's neck. They gave him biscuits and chocolate. All those big fellows stooped down to pat him on the back and ask him his name and tell him not to be scared but just step right out as though he owned the earth. Buddy simply said, "Yes, mister," to everything, and they all laughed to see how seriously he was taking it. Of course, it must be a great occasion for the kid!

They were off! Crash bang! A dozen bands began playing a dozen marches. Some two thousand men said, "Yea-a-a-h" all together, leaped once in the air, and stepped out with their left foot. Buddy looked over his shoulder. His friend nodded to him.

"Go on, mascot!" he called. "Shake a leg!"

Buddy shook, swinging his cane, his nose in the air, his little legs striding forward to keep step with the music. Behind him the Highlanders, with the banner, laughed and winked at each other.

They turned into the street and the fun began. There are no secrets in a college town. The news of Buddy's coming sped ahead of him. "The Highlanders have a mascot!" "Such a cute little chap!" People crowded to the curb to see him. They began to applaud. They clapped their hands; children pointed at him; well-meaning ladies waved to him and told him he was a dear. Once a swarm of urchins saw fit to invade the roadway in front of Buddy and address him in slanderous terms. They may possibly have been friends of his. Buddy deftly poked one in the nose and left the others to scatter before a handful of Highlanders who swooped down on the scoffers with heavy hands and strange outcries.

THE passing of Buddy down that crowded street deserves to take its place alongside of the great triumphal progresses of history—Julius Caesar, Henry of Navarre, George Washington, and others.

Out at the field the Highlanders received a lordly welcome as they passed before the grandstand, spectators and undergraduates rising to do honor to Buddy. And then they all scrambled up into the bleachers, class by class, and the game was on. Buddy was a capable critic of baseball, but apparently this crowd cared nothing for the fine points of the game. Their only interests lay in the production of noise, the achievement of satisfactory results on the score board, and the consumption of "ice-cold lemon soda"—"lemon soda" by tacit consent and "ice cold" by courtesy.

Almost at the start of the game the Highlanders burst forth with their Bang! Bang! Bang! song, and, as will sometimes happen even in a truthful narrative, the home team scored two runs. Great blaring of bugles, banging of drums, and vocal discord in the bleachers. The Highlanders were swelled with pride. It was their song that had done it, and they said so loudly, to the great annoyance of neighboring classes. Buddy, down in front on the grass, came in for his share of praise. At the first note of the

song he had risen dutifully and led it, and a long ripple of laughter from the stands showed that they were enjoying him as much as his own class.

UNFORTUNATELY the Highlanders became so inflated with self-conceit further along in the game that they rashly sang their magic song again, rising with great solemnity in their seats and proclaiming the desirability of another run which they would now produce. The fact that the other team was still at bat did not seem to enter into their calculations. As often will happen, even in the wildest fiction, scarcely had the chorus begun when the visiting team proceeded to knock out a home run, bringing in two men all told. Now comparatively few people really care who wins a commencement ball game, but just the same it was an anti-climax.

And, most unfortunately, this happened twice!

The Highlanders sat very gloomily contemplating the four-to-two score and pretending not to hear the remarks addressed to them from nearby bleachers about their hoodoo song and their hoodlum mascot. The Jockeys of course made all they could out of the situation, and the hilarity of the

Turks dwindled very perceptibly. Empty soda bottles landed with unpleasant frequency in the Highlander camp. A comparative silence fell on the bleachers. Even the sun retired behind a cloud. Buddy sat very silent and inconspicuous against the low fence. Buddy's power of instinctive perception was well developed.

Six, seven, eight innings passed. No change. The game was on ice. The visiting cheering section made no bones about it. Came the last half of the ninth inning. Everyone stood up and waited hopefully but without conviction. Suddenly, "Crack!" and a man on first. Moderate excitement.

Men on bases were not all at this stage of the game. "Crack!" and a man out at first, runner safe at second. Intermission while the pitcher leisurely struck out the next man up. Two down, one man on. "Crack!" again, and a cloud of dust. Both men safe, at first and third. This time there was a goodly roar, tapering off into the chatter of an excited athletic crowd. It was a good finish in any case. Batter up. Strike one—general commotion. Man on first safe at second! Perfectly senseless of course, but it is senseless things like that which make college baseball fascinating.

Buddy edged himself forward. This was momentous. Two men down, men on second and third, one strike, two runs needed to tie—let alone three to win. Out on the diamond they were taking their time. Buddy looked back at the bleachers. Had they forgotten? Surely this was the moment to sing. It had worked once, it must work again now that they had paid the penalty for their pride. Buddy stood up. "Sit down!" "Shut up!" "Down in front!" they called to him angrily. "Can the hoodoo play ball?" roared the Jockeys.

Buddy stooped for a second under the storm, then resolutely he stood up again. If they had lost faith, well, at least he could try. He only knew part of the song, but he would do his best. He raised his cane and stamped his feet.

"Bang! Bang! Bang!" piped the little voice, "and we'll fire off the fire—"

"CRACK!"

Buddy never finished. At least no one heard him finish. He saw the Highlanders leap as one man into the air. Out of the corner of his eye he saw the Jockeys and the Turks and all the rest of them do the

[CONTINUED ON PAGE 58]

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Some Nuggets from My "Household Mine"

By Mrs. A. J. Cavanaugh of Kansas

NEVER buy new window shades so long as the rollers are in good working order. Instead, when my shades become worn and soiled, I make new ones. I take two yards of white Indian head cloth (this is for the ordinary-sized window) for each shade. The cloth I use is 36 inches wide, very durable, and lasts for years. I hem the bottom, starch stiff, and iron. Then I tack to roller, and I have a new shade better than the commercial variety. When soiled, I wash, starch, and iron again. Of course, they may be dyed any shade.

Wherever there are children or careless servants, there will be broken dishes. I have my share of them. I have had many souvenirs and keepsakes, glass, delicate china, and so on, broken—things that I could not afford to, or would not, throw away. I tried all sorts of bottled and caked cements, etc., but not one of them gave satisfaction, especially if the dish or other article was afterward placed in hot water. I experimented until finally I found a mixture that gave absolute satisfaction. So now when a dish is broken I mix one-half ounce gum arabic with a teaspoonful of boiling milk, adding enough plaster of Paris to make a paste. I have the broken pieces that are to be mended warm, then apply the paste with a soft brush. When set aside three or four days, either hot or cold water can be used on the dish with impunity.

Whenever I pack away woolen blankets and winter clothing, I keep away all musty odors by sprinkling them with this sweet-smelling mixture: One ounce each of powdered cinnamon, cloves, nutmeg, tonca beans, caraway, and mace. Add to this six ounces of powdered orris root. Then make little cheesecloth sachet bags, fill them with the mixture, and place in the folds of the blankets or clothing.

When doing dirty work I find that an oilcloth apron saves much washing. They can be bought made up, but are easily made of white or small checked oilcloth, and bound around with tape.

If you have the misfortune to spill ink on the floor or on cloth, dry up all the ink you can with waste cloth or blotting paper, then dampen the place with water and cover well with common baking soda. After letting it stand for two or three hours, you will find that all traces of ink are gone.

Inside of my pantry door I have two ordinary file hooks. On these I hang paper bags that I wish to save for future use, hanging them by the upper edge so there will be no hole in the bags. One hook is for the large bags, the other for the smaller ones. They are always ready for use, and take up little room.

I have easy-running casters put on all my furniture that has to be moved often. Having them on the kitchen table has helped much in saving steps, since the table may be moved where most needed at the time.

Try covering your kitchen table with zinc and see how much labor is saved. The zinc is not easily kept clean, but hot cooking vessels may be set on it without harm. If spots get on the zinc that water doesn't remove, use a little kerosene on them.

I never am bothered by having corks adhering to the glue, medicine, or other bottles—I always rub the cork well with vaseline or olive oil.

Keep a piece of sandpaper handy in the kitchen, and use it instead of a spoon or knife to remove burned food from enameled pans and kettles, it will not injure the enamel. Vinegar is fine for cleaning white enamel vessels, and keeps them from getting a dirty color. Steel wool is good for aluminum. Use the finest kind.

When silverware becomes tarnished I soak it in sour buttermilk for twenty-four hours, and it comes out looking like new. This is fine also for zinc fruit-jar tops when they get dingy. Always wash in warm soapsuds, and dry well.



Agency funnel for

When pouring salt, pepper, and such like into the shakers or holders, I use a funnel made from the cut end of an envelope, cutting a hole in the corner; the envelope should be sealed up before the end is cut off. This makes a good emergency funnel for other things as well.

I find the graters easily cleaned if I use a stiff vegetable brush. These small brushes are handy for a number of things.

I made a neat-appearing and serviceable waste-paper basket for the kitchen from a tall slat fruit basket stained a dull color. Also a nice one can be made of same material by covering with washable wall paper to match the walls of the room.

I never fail to add a few drops of turpentine to the water with which my floors and woodwork are to be scrubbed—it makes the room smell like new pine, fresh from the woods.

My floor is covered with a good grade of linoleum, and to save wear and keep it looking nice I go over it once a week with a water-glass solution, the same as you use for putting down eggs for winter use; then I give it a coat of clear, hard varnish every spring. This makes it much easier to keep clean, and it wears twice as long. There is always a crevice between the linoleum and the baseboard which becomes filled with dust. It was difficult to keep clean, so I had floor molding placed around the edge of the baseboard.

NOTE: In going about your daily duties, haven't you many times suddenly thought of some little thing you could do to make your work easier? Some little quirk that would save you both time and strength? And haven't you wondered to yourself why on earth you never happened to think of that before?

When these little things occur to you, why not write them down and send them on to us? That thing that helped you might be a good idea for someone else too. We will pay \$1 for every practical suggestion of one hundred words or more that you send us. Of course, the hints must be original—something you have worked out yourself, or they can't be accepted. We won't be able to use anything that has appeared before. Those ideas we can't use we will return, if a stamped self-addressed envelope is enclosed.

Address Household Editor, FARM AND FIRE-SIDE, 381 Fourth Avenue, New York City.

A Linoleum Protector

LINOLEUM should be protected with rugs and runners to prevent wearing. Matting rugs are light and wear out quickly, while all other kinds of rugs get dirty and faded with constant use. We have found cocoa matting most satisfactory for such purpose in our kitchen. It does not fade, nor fray or break when used on an uneven surface, and it is so porous that dust goes through it and does not accumulate. Mrs. C. W. S., Oregon.

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How We Made a Home on Less Than Two Hundred Dollars

WHEN Harry received his discharge from the army last winter, we felt like two young birds turned loose in the world without a home nest whither to fly. We had been married eighteen months—married, but without a chance for a married couple's true right, a love-made home and homekeeping. Harry is a doctor, and from hospital service he had been called into army service.

So, when free, making a home was a problem, for we had scarcely \$200 upon which to rely for that purpose. And starting a comfortable home, however simple, on minus \$200, at the present time, would seem impossible, at first thought, to most people. Yet it didn't seem impossible to us, nor was it. We were too happy, and by far too grateful for the opportunity to make a home, even to be discouraged over the lack of dollars, knowing rather that our willing minds would contrive a way, somehow.

Not once discouraged, we each day, each night, thought out new plans, new ways, new "hows."

A village was decided upon because it presented a welcome, fertile field for a

with two coats of white paint, then two coats of white enamel and is now one of the prettiest dressers I've seen in any home—all from a castaway.

I wanted a chair to go with the dresser. No unused chair of an available design was found at home, but I still kept my eyes and mind open for a "possible." There came a night when we went to stay with an old aunt. On entering, Harry casually remarked, "Dear, here's just such a chair as you've been looking for." The remark was overheard, and that chair, which, by the way, had belonged to my mother's mother, was gladly donated to the cause. Treated, also with the white paint and enamel, this chair of my grandmother's made a quaint and cherished associate for my mother's bridal dresser.

ABED, a dresser, and chair I had for the bedroom, then what next? A chifferobe would be quite necessary, so I cast my eye around for that. I found it in a jet-black bookcase with long glass doors. It yielded nicely to our paint brush, and came through its metamorphosis a beautiful white-enameled chifferobe, having all its shelves removed except the top, into which hangers were fastened. Pieces of the draperies used in the room were tacked inside the glass doors, and this added much to its winning appearance. These overdraperies, which were of blue and white cretonne, and curtains of white scrim were bought at a fire sale—whereby value was procured at reduced prices. I also made a bedspread and chair cushions of the cretonne. Mother added a morris chair to this room to punctuate Harry's tired evenings with moments of comfort at home. And now we have a dear little bedroom which, in our lack of space, must serve as living-room too.

God had taken my dear father "just away," leaving an office of furniture and books, some of which I had been unable to dispose of at a worth-while price. So in those articles I found another storehouse for my reconstructing ideas. Quite naturally a desk and office chair were revarnished for our doctor. An old-time bookcase was revarnished to match the desk, and made to serve as a drug cabinet. An oak hat-pole, which I had given Harry for our first anniversary present, occupied a corner of the hall—and our office was complete, with the small expenditure of a little varnish, labor, and thought.

It was quite reasonable that some of the unsalable furniture from my dad's law office could be converted into furniture for Harry's office, but who would think it could be made into tasty furniture for a kitchen



The old dresser, after being scraped and painted, made one of the prettiest pieces of furniture I have seen

doctor, and because there our living expenses would be less than in a city.

In those cold, blustery, January days there was not even a house available in the village. We finally found one home where there were two up-stairs rooms, one hall, and a porch that were not in use. They were ceiled, but not a drop of paint anywhere, and, as first seen, with their store of potatoes, peas, and grain, were far from attractive for housekeeping. Though very uninviting, it was a "place where," a step toward our home. We next set about the "how."

We didn't go to a furniture store to see what we could get there, but back to my girlhood home, seriously to consider the possibility of recreating old castaways there.

Not a jam of furniture did we plan for, either, but only things that would have a place in those two rooms. I always had in mind a suitable place for each thing before I wanted it.

MY COLOR scheme was to be delft blue and white. Why? Because I especially liked those colors for bedroom, dining-room, and kitchen. Then, too, they would be neat and artistic, and would offer opportunities for fixing over a variety of old furniture.

Our first step was to paint the walls and ceiling of both rooms and hall a soft white. By doing the work ourselves our only expense was the cost of the paint. One room we would use for bedroom and living-room, the other for kitchen and dining-room, while the hall between them we planned to fit up for Dr. Bradford's office.

In our outhouse store-room of castaway furniture I found an iron bedstead. This I re-enameled in white. From that same store-room I pulled an old dresser that belonged to my mother's bridal suite. A high chest of drawers was on the left, and a long mirror, which the cold weather had "flowered," on the right. It was a beautiful piece of oak furniture, but had been put away because of the mirror and the fact that it was out of style. I sensed the possibilities within it. Taking off the mirror and chest of drawers, a low-base dresser was left. I procured a large square mirror from a nearby dealer, and had it swung in a frame made from the frame of the old mirror. The whole dresser was scraped, treated



Our cheap dining-room chairs, before and after being decorated with white paint

and dining-room? An old-fashioned bookcase we took apart. The top part, having had its ornamented top taken from it, and a plain, flat top left, was put upon a base with ten-inch legs and, painted inside and out, furnished our "co-din-ette" (meaning kitchen and dining-room together) with one of the daintiest little china cabinets one could wish for.

The lower part of the same case consisted of one large space and some pigeonholes. We took out the inside pigeonhole partitions, with the exception of the last row which I left for baking powder, measuring cup, etc. So it was turned into a bread cabinet, white inside and out. Three candy buckets were painted, and placed inside, as bins for flour and meal. It was a handsome piece of old furniture, and is now a bread cabinet that I'll ever cherish, use, and be proud of—all from a castaway bookcase.

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16 different models, one for every stove. Write for free literature—tells how two gallons kerosene equals more than ninety-seven pounds of coal.

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2003 Pine St., St. Louis, Mo.
Western Shipments From San Francisco.

AGENTS
WIRE, RAIL, MOTOR, TRUCK

An old, flat-top desk, which had even been discarded from office use, we enameled. It made a spacious kitchen table, where its two side drawers came into welcomed use. On one corner of the table I placed the chest of drawers taken from the dresser. These are convenient places for dish towels, napkins, etc. Underneath the table two shelves were swung for the pans, which I selected in blue and white. I have found that shelves swung under the table in this manner are more convenient than anywhere else.

We also made a grocery cabinet in one corner of the room with drawers, shelves, and space for groceries. When painted white inside and out it added to the appearance of our codinette and, in the absence of a pantry, furnished a convenient hiding place for all kinds of vegetables, etc. Cans were enameled and lettered in blue for rice, coffee, and the like. Quite a nice appearance this cabinet made when open, revealing its white walls and shelves with their blue and white receptacles.

TO COMPLETE our codinette, we bought a dining-room table from a second-hand dealer, also the cheapest cane-bottomed chairs, which could later be cast aside without regret. When painted and enameled one would never guess this table and the chairs looked as they did when we bought them. White curtains, with overdraperies in blue, and a linoleum square in a blocked pattern of blue and white bring out the freshness of the room, and make it a codinette where my work is a pleasure.

In the spring we turned our thoughts and plans towards our veranda, for that would be our summer living-room. We made two porch boxes, and filled them with blooming plants, bought two porch chairs and three flower pedestals, which we finished in white enamel. Neat and fresh they always look, and are practical in that they are so washable. A couch swing was later added, wherein many happy summer moments have been enjoyed.

So homelike and cheerful, our little apartment is throughout just a happy, little "wren's nest, junior" (with all due apology to Joel Chandler Harris), up among the treetops, where we, indeed, vie with the birds in their carefree happiness. A happy home that we take pride in telling was made on minus \$200, and hope the telling may help others to build their after-the-war homes in like manner.

If You Like Hot Bread for Breakfast Try These

CORN POP-OVERS

Scald one and one-fourth cups cornmeal in two cups of sweet milk. Add one level tablespoon shortening and one-fourth teaspoon salt. When cool, add three well-beaten eggs. Bake in a hot oven in gem pans for about thirty minutes.

BUCKWHEAT MUFFINS

- | | |
|--------------------|-----------------------------------|
| 1 cup milk | 1 teaspoon salt |
| 1 tablespoon fat | 4 teaspoons baking powder |
| 1 tablespoon syrup | |
| 1 egg | 1 cup wheat flour |
| | $\frac{3}{8}$ cup buckwheat flour |

Sift dry materials together. Add to the cup of milk the melted fat, syrup and beaten egg. Combine these two mixtures, stirring lightly without beating. Bake about thirty minutes in a moderately hot oven.

SPOON BREAD

- | | |
|-----------------------------------|---------------------------|
| 1 cup white cornmeal | 1 teaspoon salt |
| $1\frac{1}{2}$ cups boiling water | 2 teaspoons baking powder |
| 1 cup sweet milk | |
| | 2 eggs |

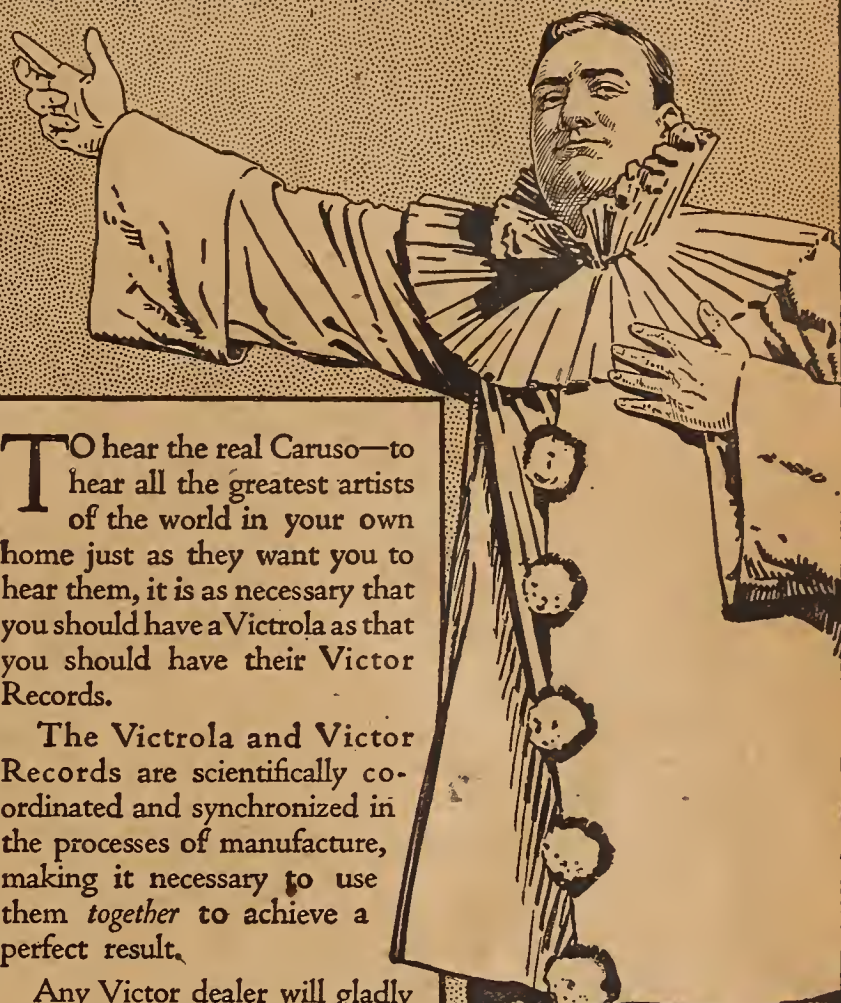
Sift meal into a bowl. See that the water is boiling vigorously. Pour over the meal, stirring at the same time. When lukewarm, add the sweet milk, the well-beaten egg yolk, and beat thoroughly. Add the baking powder, and last fold in the stiffly beaten whites. Pour into a hot well-greased baking dish, and bake in a moderately hot oven thirty minutes. Serve from the baking dish with a spoon.

RICE CRUMPETS

- | | |
|--------------------------|---------------------------|
| $1\frac{1}{2}$ cups milk | 2 teaspoons baking powder |
| 1 tablespoon fat | |
| 3 eggs | 1 cup boiled rice |
| 1 teaspoon salt | 1 cup cornmeal |
| | $\frac{1}{2}$ cup flour |

Sift the dry ingredients together. Add to the milk the melted fat, beaten eggs, and rice. Combine these two mixtures, stirring lightly. Cook on a hot greased griddle.

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A Biddy Box Social for St. Patrick's Day

A SCHOOL wanted to raise some money, and the committee thought St. Patrick's Day a splendid occasion for an evening of fun and profit.

Big posters were put up in the post office, school buildings, and principal store windows. At the top of each large white placard was sketched a lunch box tied with bright green, and below it was lettered this rhymed notice in green:

To a Biddy Box Social, on St. Patrick's eve,
You're warmly invited; the cash that you leave
For a stove for hot lunch in the schoolroom will
pay.
So be a good citizen—don't stay away!

The whole poster was bordered widely with the same Irish color.

On the chosen evening a jolly crowd gathered with supper boxes and baskets of every description, for everybody knew that a box social meant bringing a box of lunch.

The school hall was trimmed with green paper streamers, Irish and American flags.

The first game, which proved a real ice-breaker, was an adaptation of the old one called "Rachel and Jacob," and was named "Biddy and Pat."

A circle was formed, and inside it a girl and a boy were appointed to take places. The boy was blindfolded, and expected to catch the girl by following the sound of her voice, as she answered his constant query, "Where are ye, Biddy?" spoken in a rich Irish brogue. She, of course, tried to keep out of his reach, but was obliged to answer, "Here Oi am, Pat."

When Biddy was caught, she in turn was blindfolded, Pat was released, and a new Pat was chosen to elude Biddy's efforts.

After this game everyone was eager to pay a visit to the blarney stone in one corner of the room. Here, under a big sign saying, "Come and kiss the blarney stone," a large rock, looking as if it had just been lifted from a stone wall, was placed on a patch of green grass, well sim-

ulated with paper and excelsior on the floor. A pretty girl dressed in white, with a little green shamrock-shaped bib apron and a green cap, was in charge, and superintended "kissing the blarney stone."

The process was simply that of bending down and laying a nickel on the stone, after which a sweet message on paper was handed out, and recommended to the recipient for use during the remainder of the evening. If desirable, the charge for this amusement could be omitted; but, as it was, some extra money was made in this way.

Nobody was really surprised when presently it was announced, that since this was a "Biddy" party, everyone would be expected to bid on the supper boxes as they were put up for auction. The novel stipulation was added that everyone must use the broadest possible Irish brogue in bidding. The following of this regulation and the clever auctioneering by one of the boys made mirth run high.

Also, many of the boxes were amusingly decorated. There was one with a toy pig tied into the bow, another with a cut-out picture of little Irish boys jigging on the cover, many with green bows of shamrock trimmings, and of course a large number of patriotic-looking ones.

When the boxes had all been sold, their buyers seated themselves in groups to explore the contents. As a welcome accompaniment to the refreshments thus provided, hot coffee

was served by the committee, the girl members of which wore pretty little green shamrock-shaped aprons and full caps like the blarney-stone miss; the boy members took delight in flaunting huge green neckties.

A satisfactory sum in money and a rousing good time was the result of this Biddy Box Social.

NOTE: A set of blarney-stone messages will be sent to any reader on receipt of a stamped self-addressed envelope by the Entertainment Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.



"Here Oi am, Pat"

Games for Easter Monday

IF YOU'RE somewhere between five and fifteen, and you're invited to an Easter Monday Party, you will enjoy the following games:

HUMPTY DUMPTY: Stuff a pillow case plumply, making it as egg-shaped as possible. Mark a face near the top, and tie a band of bright ribbon or cloth, cravat-fashion, a little below the middle. The pillow should look quite Humpty-Dumpty-ish by this means. Now set Mr. Humpty upon a chair back or on an improvised shelf. He may need to be weighted inside.

Let each child in turn have a shot at him with a light baseball or a toy ball heavier than rubber. Someone should be appointed to keep score, and each child who knocks Humpty Dumpty off his perch is credited with 2. A child who simply touches him with the ball, but does not knock him over, is credited with 1.

Have as many rounds as you wish, and then add up the scores to see who has won.

EASTER EGGS HIGH: Divide the children into companies, and line the companies up in two rows, facing each other. Give the captains of each line a gayly painted Easter egg to be passed from hand to hand down the line as rapidly as possible. The child at the end of each line, as soon as he receives the egg, must shout "High!"

Of course, in the haste that will result from the race the egg is likely to be smashed in transit. In that case the side smashing its egg is penalized, and everybody must pay a forfeit. In the meantime another egg can be supplied if you wish to make another try at the relay race.

PETER RABBIT'S ADVENTURES: This is a variation of the old-fashioned game of stage coach. Each child is given the name of some character or object in the famous story of "Peter Rabbit." Seat the children

in a ring and begin to tell the story. As you use the names of the characters or objects, the children answering to them must rise and hop three steps rabbit-fashion. When Peter Rabbit's house is mentioned, all the children exchange places, and the one without a seat must tell a tale.

EASTER BOUQUETS: Seat the children in a circle and start the game by saying, "I picked an Easter bouquet; in it I put a lily." The next in the ring must repeat this and add another flower to the bouquet. The third continues by repeating what the first and second children have said, and adds still a third flower.

It will be quite a large and variegated bunch of posies that results.

Concerning Rabbits—and Eggs

EASTER eggs which are pretty and novel may be decorated as follows: In several small cups, set in hot water, melt up odds and ends of Christmas or birthday candles of different colors. Having previously boiled the eggs in soda water, on each egg draw with a pencil, lightly, a rabbit, a tiny chick, a flower, or anything that will be somewhat appropriate.

Then, with a small camel's-hair brush, apply the melted wax, which cools rapidly, the design standing out like a cameo. Next have ready lukewarm dyes of any color desired, and dip in the eggs. Dyeing the eggs will not affect the wax.

Many artistic results may be obtained. Thus a pure white rabbit with pink eyes, on a yellow or purple egg, is very attractive; or a yellow chick on a tuft of green grass on a pink egg is lovely. J. L. H., Ohio.

Dish-washing
made Ida's hands
chaf

It always did—every winter. Finally, Cousin Kate came from St. Paul for a visit. She suggested

Mentholatum

Always made under this signature *A. H. Hyde*

It healed Ida's hands almost over-night—gently and completely. She always keeps it handy now.

Her hands are soft
Mentholatum heals cracked lips, too—and cuts, burns and other "little ills."

Mentholatum is sold everywhere in tubes, 25c; jars, 25c, 50c, \$1.

The Mentholatum Co.
Buffalo, N. Y.



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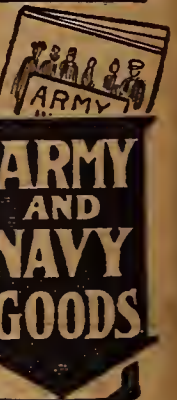
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SEND 10c FOR ARMY & NAVY CATALOG—108—AND BUY AT AUCTION BARGAIN PRICES

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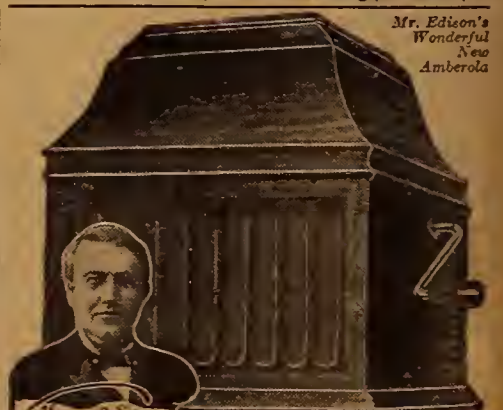


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Keep the New Edison Amberola—Edison's great phonograph with the diamond stylus—and your choice of records, for only \$1.00. Pay balance at rate of only a few cents a day. Hear it in your own home before you decide. Only \$1.00 down. Write today for our New Edison Book and pictures, free.

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Use surplus milk for Junket. It is so delicious and so wholesome. Children love it and it is the very best food for them—and grown-ups too!

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MADE with MILK

is easy to make, in a wide variety of tempting dishes.

Use Junket Tablets for making plain Junket milk-food, desserts, ice cream, cottage and other cheese and you will never be without them.

Hansen's Dairy Preparations, for making and coloring butter, cheese, buttermilk, etc., are the world's highest standard.

A valuable booklet, "The Story of Cheese," free with \$1 order. Write for free literature.

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Little Falls, N. Y.



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Let us send this fine razor for 30 days' free trial. When satisfied after using, send \$1.85 or return razor. Order Today. **JONES MFG. CO.**, 136 W. Lake St., Dept. 343, CHICAGO



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wanted in every county to give all spare time. Positions worth \$750 to \$1,500 yearly. We train the inexperienced. **Novelty Outfitters Co.**, 152 Bar St., Canton, Ohio

Don't throw away your old torn clothes. We will make you a beautiful cap from any old garment. Send for style booklet. **CRITERION CAP CO.**, 204 W. 23 St., N. Y. City

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Latest styles and wonderful bargains in men's, women's and children's clothing shown in our Style Book and Catalog. Just send post card with your name and address to **Chicago Mail Order Co.**, 25th and Indiana, Dept. 222, Chicago

Lift off Corns with Fingers

Doesn't hurt a bit and "Freezone" costs only a few cents.



You can lift off any hard corn, soft corn, or corn between the toes, and the hard skin calluses from bottom of feet. Apply a few drops of "Freezone" upon the corn or callus. Instantly it stops hurting, then shortly you lift that bothersome corn or callus right off, root and all, without one bit of pain or soreness. Truly! No humbug!

Tiny bottle of "Freezone" costs few cents at any drug store

A Ribbon So Gay

IT WAS only a bright gay ribbon the new teacher revealed when she took off her coat that rainy morning in the dingy little schoolroom, but it seemed to scatter gathered rays of sunshine among the assembly of country children clad in typical rainy-day garments. Because of the rain it would seem that each mother had dressed her child in his oldest, darkest, least becoming clothes, with the result that a gloom seemed cast on the schoolroom from within as well as from without.

But the new teacher was pleasant to look upon. Her black skirt and white waist were relieved by the bright red ribbon tied at her throat, and the children, noting the addition, smiled and forgot the rain. Perhaps the teacher, too, felt the effect of the bit of color; at any rate, her cheery air was even more pleasant that morning.

Now, rainy days must come occasionally everywhere, but they need not be days of gloom. Why send your children to school in their drabdest "duds"? If ever cheerful hues are needed it is on sunless days. Think of that when you awake to the patter of raindrops on your roof. Dress a bit more carefully yourself that morning, think up some especially well-liked dessert for dinner, don't clutter the house with disagreeable odd jobs, but endeavor to make the least cheery day out of doors the cheeriest of them all within. And help the district teacher keep the little minds under her alert by dressing your children in sunny colors, to make up for the absence of the sun's rays. *Mrs. M. B., Colorado.*

When You Put in Plumbing

[CONTINUED FROM PAGE 50]

good trays. Concrete trays are cheap, but are liable to crack. Soapstone trays are next in price; they last well, but are not so sanitary or attractive in appearance as those made of porcelain-enameled cast iron. Perhaps you can find room in your kitchen at the end of the sink for the trays. Perhaps a combination of sink and tray would suit you better. When they are set close like this the cost of installation is much reduced.

Let us now consider the plans offered by architects for new houses: There have been some admirable plans shown in this and other farm magazines. In order to cheapen construction, however, the placing of the plumbing fixtures has been considered secondary to other matters, such as, for instance, the supposed importance of heating all of the rooms by one stove in addition to the kitchen range. Forget this point. You eventually will adopt a central heating plant. Perhaps it will be the "pipeless" furnace, perhaps some other form. But you undoubtedly will come to it. So locate your bathroom now so that it does not enter from a living or dining room. You will suffer embarrassment at some time or another by having an entrance to such a room from another where people are congregated.

The place for a bathroom is near to the sleeping-rooms, and its entrance should be from a hallway. If you need a wash-up room on the first floor, it will cost you less than a hundred dollars to place a closet and lavatory somewhere near to the back door. Try to arrange it so that this room will be under the bathroom, and your extra cost will be little.


And when you come to plan for the heating of a bathroom, if your system is to be a warm-air one, even if you plan to heat the whole house by one register, go to the small extra expense incurred by placing a separate register in the bathroom and also one bedroom. Then, if you have need to isolate any member of your family in a bedroom because of infectious disease, you can do so with the assurance that the air of that room is not being circulated throughout the house.

This is the chief objection to a one register and return air heating system. It's so easy to overcome it that it's no objection. But select the furnace and the style of register to go with it so that the top of the furnace will accommodate the two additional pipes and fill them with warm air when required. It can be done all right.

You will come to use a central heating outfit because it is really more economical, and because the temperature of your home is more equable when you have it. Stoves warm the rooms in which they are placed very well, but they do not give the comfort that a positive circulation of warm air does. And it is a comfort that all of us want.

Fight Film To Save Your Teeth

All Statements Approved by High Dental Authorities



It is Film that Ruins Them

This is why brushed teeth discolor and decay. And why old methods of cleaning have proved so inadequate.

Your teeth are covered with a slimy film. It clings to them, enters crevices and stays. That film is the cause of most tooth troubles.

The tooth brush does not end it. The ordinary dentifrice does not dissolve it. So, month after month, that film remains and may do a ceaseless damage.

That film is what discolors—not the teeth. It is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea. Also of many other troubles.

Dental science, after years of searching, has found a way to combat that film. Able authorities have proved the method by many careful tests. And now, after years of proving, leading dentists all over America are urging its daily use.

Now Sent for Home Tests

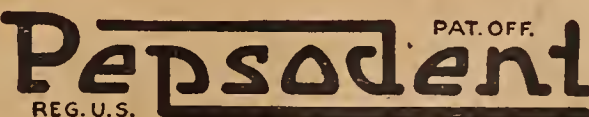
For home use this method is embodied in a dentifrice called Pepsodent. And a 10-Day Tube is sent without charge to anyone who asks.

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to day by day combat it.

The way seems simple, but for long pepsin seemed impossible. It must be activated, and the usual agent is an acid harmful to the teeth. But science has discovered a harmless activating method. And millions of teeth are now cleaned daily in this efficient way.

Let a ten-day test show what this new way means. The results are important, both to you and yours. Compare them with results of old-time methods and you will then know what is best.

Cut out the coupon now so you won't forget.



Pepsodent

The New-Day Dentifrice

Now advised by leading dentists.
Druggists everywhere are supplied with large tubes.

See What It Does

Get this 10-Day Tube. Note how clean the teeth feel after using. Mark the absence of the slimy film. See how teeth whiten as the fixed film disappears. Learn what clean teeth mean.

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made to your own measure. It won't cost you one single cent. We will give it to you so you can show it to your friends. It will be a big advertisement for us. You can easily make from

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and besides that be the best dressed man in your town. It's an opportunity you cannot afford to overlook. Even if you only want to order a suit for yourself, don't fail to

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This is the biggest shoe bargain you ever heard of. So sure are we that we will send these wonderful shoes without a single cent in advance. Just send coupon stating style, size and width. Your shoes will be sent by return prepaid mail. Pay postman on arrival. Try them on. Examine them. Compare with higher priced models. Then decide if you wish to keep them at our bargain price. You take no risk. If this isn't the most remarkable shoe offer ever made, return shoes at our expense.

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Customers write that these shoes wear from 12 to 20 months. This is it. Only \$4.45 a year for shoes. Made in dark brown only, on the U. S. Army Munsion last, adopted by Government because it is so comfortable. Made of solid leather, specially treated to stand hard wear. Blucher style. Dustproof bellows tongue. Reinforced shank. No krome elkskin uppers (not split leather). Will dry soft after being wet. Specially tanned making them acid and moisture proof. Solid leather broad heels. Krome Elk Soles, special tanning makes them twice as durable. (Will outwear 2 oak leather soles). Extra wide. Sizes 6 to 12. Pay postman \$4.45 on arrival. Regularly sold at \$6.75 a pair to hurry your order. If not satisfied on arrival return shoes and money, including return postage, will be refunded at once.



No. 393
We Pay \$4.45
Postage

Men's Extra Quality Dress Shoe

While stock lasts we will ship this wonderfully stylish model at our bargain price. Made of genuine leather, black gun-metal, blucher style, on newest Fifth Avenue last. Combines comfort, style, quality. Sure to give excellent wear. Has genuine solid oak leather sewed soles and is reinforced throughout. Sizes 5 to 11. Widths, medium, wide, extra wide. Pay postman \$4.65 on arrival. They are worth \$7.00 a pair. Rush coupon today or you may be too late; the supply at this price is limited. Pay postman on arrival. If not satisfied on arrival send shoes back and money, including return postage, will be refunded at once.



Women's, Growing Girls, Misses & Children's High Cut Money Saver.

We have 800 pairs of these wonderful shoes on sale. Built for women and growing girls on medium round toe last which is stylish and comfortable. Made in high cut Black and Dark Mahogany Brown (Mention Color Desired When Ordering) 8 1/2 inches high. Best grade leather uppers. Have leather counters, solid leather sewed soles, insoles and heels, as smooth as silk inside—sewed with best grade waxed thread throughout. Made on medium round toe last, low broad heels, extra back strap to prevent ripping, extra full wide tongue of genuine leather. Women's and Growing Girls' sizes 2 1/2 to 8. Pay \$4.95 on arrival. Misses' sizes 1 1/2 to 2. Pay \$4.35 on arrival. Children's sizes 6 to 11. Pay \$3.95 on arrival. For Misses and Children we have built this shoe on our full wide toe last, which allows plenty of room for the five toes. Widths, medium, wide and extra wide. Cannot be Purchased Elsewhere for Less Than Six Dollars. Will outwear three ordinary pairs of shoes. Rush coupon. If you do not think this the highest bargain you ever received, return shoes and money will be refunded, including all charges immediately.



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Send shoes marked X in square below. I will pay postman on arrival. If not satisfied I will return shoes and you will refund my money including return postage immediately.

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<input type="checkbox"/> No. 207—Dress Shoes	—Size.....	—Width.....	4.65
<input type="checkbox"/> No. 922 —Sizes 2 1/2 to 8—Size.....	—Width.....		4.95
<input type="checkbox"/> No. 922X —Sizes 1 1/2 to 2—Size.....	—Width.....		4.35
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Name.....
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Send Coupon

Sign and send coupon at once. Don't send a cent with it. In a few days you will receive shoes. If not entirely pleased, don't keep them. We guarantee a saving of \$2.00 a pair or your money back. Every cent of it, including return postage. Send now, before coupon gets away from you and you miss this wonderful bargain.

Not a cent in advance

Remember, don't send money in advance. We take all the risk. Send coupon at once and enjoy real foot comfort at our bargain price.

Buddy the Mascot

[CONTINUED FROM PAGE 52]

same. Some two thousand hats soared heavenward. Some two thousand voices roared out a Niagara of sound. It was described in the papers as a scene of pandemonium. Even the sun came out to see what had happened.

It was quite simple. Inartistic as it may have been, the Casey of the hour had not struck out, that's all. Instead he had cracked out a home run to the field house, and when Buddy turned around they were carrying him on their shoulders to the bench with the winning run safely stowed away in his system. Those things will happen, especially in college baseball.

They came pouring down from the bleachers shouting, "Music! Music!" The first to reach Buddy was his big friend. "I did it, mister!" said Buddy eagerly. "I sang the song, an' we won, an' there'll be fireworks!"

The big fellow grabbed Buddy and hoisted him up on his shoulder. The others all came swarming around them. Even the Jockeys seemed satisfied. After all, it was true, the kid had sung the song and they had won.

"Listen boys!" shouted the big Highlander. "Give a cheer for Buddy! He won the game for us. Long cheer for the best mascot a class ever had!"

THEY gave it. They gave several. Other classes went so far as to tempt Buddy with culinary bribes, but he remained firmly established on the shoulders of his friend. In this manner they carried him around the field and up the street, through the dust and the crowds, with the sunset at his back. Buddy's second passing was an apotheosis which will rank in the chronicles of the world with Marguerite's ascent to heaven and the Return from Elba.

And that evening, of course, they had fireworks. Perfectly splendid fireworks, enough to make up for the last two years. The big space of grass was a nightmare of smoke and torches and swirling figures. The climax came when the Highlanders with the majority of the twelve bands present carried Buddy around from class to class to be cheered. And then the last pinwheel sizzled off, torches began to go out, and Turk and Puritan, Jockey and Clown, Convict and Highlander, set to work to disentangle themselves. The celebration was over for this year.

Buddy jumped down off a fence post and came to earth mentally as well as physically. He awoke from a dream of skyrockets and cannon crackers and felt very tired and hungry. A little chilly too for the bare feet. It must be very late. And there was something else. What was it?

His business! Gee whiz, yes, his business! Buddy had forgotten all about it. This was a calamity presenting the most dire consequences. What should he do? It was too late now. For a moment he hovered on the edges of the crowd, then suddenly he turned and ran off in the darkness. Some of his Highlanders saw him go and called "Good night!" to him, but he did not answer.

"Poor kid," said one, "he must be all in! Guess he had the time of his life, though. He never had a day like this before, I bet."

Buddy went down a succession of dark side streets, climbed a couple of back fences, threw a brick at a passing cat, missed her, and let himself into a messy kitchen through a screen door.

"So there you are!" said a woman's querulous voice, as she stopped her ironing to inspect him. "They keepin' open late at the grocery to-night?"

"Guess so," Buddy replied, sniffing at the stove.

"You guess so?" she caught him up. "Don't you know? Ain't you come from there?"

"N-no," Buddy admitted cautiously.

"You ain't?" she exclaimed. "Where have you been, then? I know, traipsin' around the college, watchin' them crazy boys at their antics—answer me!"

"I been there—some," Buddy admitted shifting his feet.

"Ain't you got more sense than that?" she scolded. "A boy your age! An' goin' to your job so early too—you had ought to be in bed long ago. What'd Mr. Elkins say to you, anythin'?"

"Nope," replied Buddy with conviction, glad of an opportunity to give at least one entirely truthful answer.

"Didn't he say nothin' about your runnin' errands and all bein' satisfactory?" she insisted. "He said he'd take you on trial like to-day, just to see if you was any good."

"He didn't say nothin'," replied Buddy. Oh, shucks! What was the use? There had never been a day like this. What were jobs and running errands, and all the rest of it, compared to the utter glory of this day of days. He looked up at her defiantly, and in so doing he looked a little less like an angel than usual.

"I ain't been to the store at all!" he said very firmly.

"You what?" she exclaimed. "You ain't been to the store? Now don't you lie to me—you been fired!"

"I ain't lyin'," said Buddy, "an' I ain't been fired. I—I been busy all day."

"Busy!" she snorted. "Busy what at, I'd like to know?"

"I been a mascot," Buddy explained, and the mere mentioning of it brought a transforming smile to his face.

"A which?" she asked.

"A mascot," he explained eagerly. "You walk out in front of the pee-rade, an' sing songs, an' make the fireworks come—gee, it's slick, Ma!... I forgot to go to the store," he concluded lamely.

"Mascot, is it?" she exclaimed. "Forgot to go to the store, did you? An' lost your job—at your age too—I'll mascot you! Come here to me!"

"I don't care!" he said when it was over. "Those fellers was all older'n me—and they done it too, marchin' and all. I guess I'll have my name in the papers too—an' my picture perhaps, gee!" He paused and sniffed at the stove again.

"Can I have some supper, Ma?"

"Supper!" she stormed at him. "No supper for the likes of you! Go on to bed with you this instant. I'll have to see Mr. Elkins to-morrow an' try an' explain. Guess I'll have to tell him you got sick or somethin'."

"I wouldn't, Ma," said Buddy proudly. "He'll be seein' my picture in the paper to-morrow, I guess," and he retreated hastily out of the kitchen.

UP-STAIRS in his dingy little room Buddy flung himself on the bed, overalls and all. Oh, he was tired, and hungry! But he did not go to sleep right away. No, he stood up very quietly in the dark. From unforeseen recesses of his person he carefully produced a Highlander banner and cane. He put on the bonnet and raised the cane. Very gently he stamped his feet.

"Bang! Bang! Bang!" whispered Buddy. "An' we'll fire off the fireworks to-night." His eyes were shining in the dark. Out there somewhere, on a sunlit diamond, a man was making a home run. . . . Throngs in costumes were cheering themselves hoarse for Buddy the mascot. . . . A Roman candle went soaring through the ceiling; no, above the trees. . . .

When he finally went to sleep there were brass bands playing in his ears, and Highlanders dancing before his eyes, and the bonnet and cane were clasped close in two little grubby hands.

Downstairs in the kitchen his mother smiled suddenly over her work.

"The little rascal!" she said to herself.

"Guess I'll buy a paper to-morrow."

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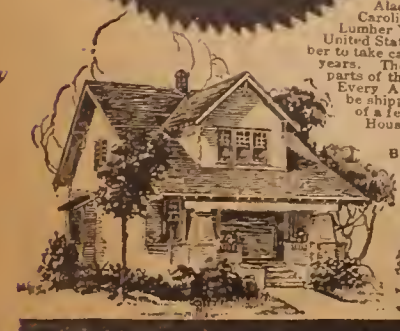
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FOR YOU! GLORIOUS ROSES OF RARE BEAUTY

Can you think of anything in this wide world more beautiful, more wonderful than fragrant, colorful roses? How much the appearance of a house is improved by them! Roses about the home reflect the owner's love and appreciation for the beautiful. They are a never-failing and constant source of delight and pride to him. To the visitor they smile a joyous welcome; to the passerby they arouse envious admiration. The family that does not make roses a part of its home surroundings has indeed overlooked a source of great satisfaction.

Our Splendid Collection Six Wondrous Rose Bushes

We feel that you good folks who read *Farm and Fireside* would really enjoy a rose garden, because of your love for everything produced by Mother Nature. And you want and are entitled to the best, so we have contracted for the very finest roses to be had—the everblooming kind—which give forth fragrant and luxuriant blossoms throughout the season. In our collection are the six vigorous hardy varieties described in detail below. These roses will grow in any good garden soil if planted according to the simple directions accompanying them. But little attention is required for their culture and they will blossom the very first season they are set out.

Red Dorothy Perkins—A climbing rose that is a perpetual source of wonder. Rapid and vigorous in growth with dark glossy foliage. The bloom is produced in great clusters, the color being a deep intense scarlet-crimson.

Alexander-Hill-Gray—One of the most delightful of all the yellow roses. Buds and flowers are immense in size, full double with pointed center, and beautifully formed. Very vigorous and free flowering.

Jonker J. L. Mock—Sometimes called the "Giant La France." A true everbloomer with gigantic flowers on stiff, erect stems and a growth that is marvelous in its freedom. Long pointed buds and double full flowers of brilliant carmine-rose on outside of petals, tinting silvery rose toward the center.

Ophelia—The queen of fancy roses so superb in its rich beauty as to be almost indescribable. Color is salmon-orange, tinted rose; buds and flowers are very fragrant, opening full and double. Growth is excellent, foliage handsome. Hardy in all localities and blooms all summer.

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Etoile De France—This rose has been selected from the unlimited number of hardy roses as the acme of perfection. It is an upright, sturdy grower with beautiful, bronzy green insect-proof foliage and bears vast quantities of massive, deep cup-sized flowers; color a clear rich velvety crimson.

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Early Training for Cows

WE READ many lengthy articles as to the best methods of breaking a horse or a cow. Of course, on the big ranches it is impossible for the owners to be on intimate terms with each individual among their herds; but I would like to ask, why is it necessary on the average farm to have a breaking period in the life of a horse or a cow? Experience has taught us that it is not only safer, but also more profitable, to begin breaking them in the very beginning of their lives.

Seven years ago we bought a heifer just before she dropped her first calf. She had never been handled, but was raised, or rather allowed to grow, on the "shift for yourself" plan, and I assure you that no wild beast ever fought harder to defend its young from the approach of danger than did this cow, which could not detect anything but danger in the approach of a human being. Anyone who can tame several such animals is eligible to enter any position where a tamer of wild animals is needed.

We were compelled to remove her horns, which cowed her to some extent, and finally she became gentle as a milker, but we never were able to overcome her nervous disposition entirely. We did not want a repetition of such an ordeal, so when the first heifer calf arrived it was fondled daily by the children. They kept its coat glossy by the use of currycombs and brushes. When she became a mother, although a perfect pet, I was afraid for the children to go near her, not knowing what disposition she might develop; so I would not allow them in the lot where she was. But I was mistaken in believing I could keep them away from their pet. Their way to the field lay through the pasture, and on looking out one day I saw them milking her, without feed, and away from the calf, one on each side and one under her, and she seemed to enjoy it as much as they did. This happened so often that I had to establish a law of time and place for milking.

She has her fourth calf now, and even during the periods when she is dry the little fellows try to milk her, and she has never been known to raise her feet or head in any way against them. Her third calf is a heifer, and as great a pet as its mother. When this calf was four months old, some unaccountable accident befell it and one of its forelegs was broken at the knee. Had she been one of the wild calves such as are seen on most farms she would now be disfigured, but she was patient while in a "swing," and quietly submitted to the frequent dressings and treatments of the injured limb, and wore splints for a long time. Now, after several months, the injured place cannot be detected.

When a farmer is on friendly terms with his live stock it is an easy matter to keep them rid of ticks, of which we have many, with no access to a dipping vat until recently. We apply kerosene emulsion with a little grease added to it, using cloth mops. But stock without "raising" will not submit to such treatment, as we learned.

MRS. L. E. ARMOUR

Why I Think Every Farm Should Have a Garden

[CONTINUED FROM PAGE 38]

canned goods would at least cost \$100 to \$150. What we save on our grocery and meat bills during all summer and fall I don't know, but with one man, and sometimes two, besides the family, it is a very considerable amount. And yet, the entire garden occupies a sheltered little spot that's less than an acre in size, and which we formerly used for a night pasture. So, altogether, it looks like a pretty good proposition, doesn't it?

And that is why I believe it pays every farmer to have a real vegetable garden. Ask the goodwife to sit down for an hour with you to-night, and decide the things you want. Pick out a good spot to use for your garden, and allow a few bags extra of the best fertilizer for it. Order your vegetable seeds right off, sticking mostly to a few good standard things. If you've got a neighbor who's a market gardener, or there's a greenhouse in your vicinity, order such plants as you'll need in advance.

Save a few loads of the very best manure you've got for that garden. You can't put it anywhere it will make more money for you than right there. I know it pays, because I've farmed both without a garden and with one.

Life on the Farm in Dear Old England

[CONTINUED FROM PAGE 6]

feminine heart), have a jolly good feed at the White Hart and some of that famous hostelry's double-X brew, see old Parsons, and see if he can't get him to part with that speckled heifer, and then return home ready for his big meal, and content with a consciousness that he has put in a "demmed good day, my boy."

And while the bigger part of the farm household has gone to town, those that remain carry on with the good work. The cake is carried out in the wagon a mile away to the pastures and dropped into the feeding troughs. The British cow likes her cake, and she gets it every day if her "guv'nor" is any sort of a farmer at all.

And where a farmer specializes in dairying he oftentimes retails the lacteal fluid himself, having his own customers in town, and running his own route men and milk carts. British milk is now 25 cents a quart to the consumer, so the farmer who produces his own and retails it without the interference of the middleman or wholesaler is in clover—somewhat.

These farmers have as many as a dozen milkcarts going all day. The British method of milk delivery is to pour it out of a churn in the cart into the smaller can from which the housewife's jug is filled. Little bottled milk is seen in Merrie England.

THE farmer has been accused of making too much money during the late war. He has, undoubtedly, made a lot of money, and so has he paid out a lot of money. Costs of production, no matter whether it be milk, cereals, vegetables, or cattle, have gone bounding ever skyward. No longer may Farmer John Bull find farm laborers to plant his cabbages, dig his potatoes, till his acres, and run his threshers for \$4 a week and a cottage free. The farmhand now will not look at the work less than \$12 a week, and then he expects his regular perquisites, such as a barrel of beer harvesting week, or the wood, coal, and vegetable ration of the farm.

Often the British farmer is a local magistrate, and comes into town once or twice a week specially to sit at the local court sessions and try small boys who have been shooting airgun darts at Neighbor Joshkin's prize bull, or shooting Old Man Giles's hogs into the front parlor of the Green Man Inn.

As for farm help, their position since the international scrap has been wonderfully improved. Their housing arrangements, their food, their hours of work, and their times of work—all have undergone a change for the better. Apropos of farm help and farm food, they tell a story here of the Scotch farm laborer, Sandy, who over his pint of Burton at the village inn was asked if it were true he had left old Farmer Tamsen.

"Aye," said Sandy. "It be true. I wudny work for him any longer—he disny feed his men. Fust day I were there a sheep were found daid, an' he salted 'un; then a coo daid, an' he salted it; twa days later a pig daid, an' he salted 'un too. Yestreen his auld wife daid, an'—well, I left."

As for the social amenities of the British farm—well, they are strong on custom and folk-lore. A land girl and a cowman decide to get married. The farmer gives



"By heck! There's a blighter in my carrot field!" Woe betide the trespasser on an English farm!



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It wanted only the marvelous success of the Cletrac in 1919 to make the bulk of farmers everywhere put their "O.K." on the small tank-type. And now, because the Cletrac is the "fashion"—because a greatly increased output means a lower manufacturing cost—we can offer a better Cletrac and still reduce the price to you.

With more power and improved construction, 1920 will prove to any farmer, anywhere, that Cletrac farming is profitable farming.

The Cletrac, used alone or in "fleets," is the right size and type for almost any farm—the one tractor adapted to all conditions. It has proved its ability to stand up to its work. And now that the public has recognized its worth, it is out in front to stay.

THE Cletrac now has a larger motor, yet no added weight or increased friction to eat up power. Its track is one-third wider, which gives it a lighter tread and a stronger grip on the ground.

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These and other features mean even better performance than before. Back of the Cletrac is the service of over 1200 distributors and dealers, with repair stocks near you and constantly increasing. Back of that is our purpose to make every Cletrac owner a booster.

You will be lining up on the side of progress if you start Cletrac farming now. You can't go wrong on it. A Cletrac means more kinds of work, more days in the year, and lower costs on every job. Now is the time to start.

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Weights less—costs less! Yet has greater speed, power, strength and lasts longer! Made of finest steel. 3 year guarantee against breakage. Clears acre from one anchor. Pulls stubborn stumps in few minutes at low cost. Single, double, triple power. Several speeds. Low speed to loosen stump—high to yank it out quick. Patented quick "take up" for slack cable. Easily moved around field. No other stump puller like it! All explained in big FREE BOOK. Write for book today! Also for Special Agents' Proposition. Shipment from nearest distributing point saves time and freight. Address me personally.

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MERRY GARDEN AUTO CULTIVATOR

Operates by a 2 h. p. motor. No pushing, pulling, twisting or straining. Simply guide it. Controlled by levers on the adjustable handles. A child can run it. Goes between wide rows and straddles narrow ones. Cultivates the hardest sun-baked soil with ease. It produces better crops with less labor. Does the work of four men. Travels 120 to 200 feet per minute.

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"It Leads the Way" (9)

them the use of his wagons and horses. All the county turns out. The wagon, its wheels ivy-clad, its sides decorated with white true-lover's knots, and bells tinkling all over it, is drawn by six huge and sedate white horses, their tails elegantly plaited with ribbons and straw.

Peggy, the bride, is dressed in her uniform of overall, breeches, and leggings. All the friends and guests crowd into the great hay wagon with the bridesmaids and the best man and the rest of the celebrators. And then, after the ceremony, they pass from the church doors under a triumphal arch of two-pronged pitchforks to the village inn, where Landlord Boniface sets 'em up and everyone drinks everyone else's health.

The British farmer has reason to thank the land-army girl. She has been a stout prop during the trying times of the past five years. No one—least of all, the farmer—dreamed that mere girls would take the place of all his men laborers, and do the work so well.

Now that the land-girl army is being disbanded the war-time distinctions have been conferred. More than 7,980 Good Service ribbons have been awarded to girls who gave special devotion to Farmer John Bull's cause during the dark days. The Distinguished Service Bar—the land girl's V. C.—has been won by fifty land girls. Twenty-four were for deeds of courage and endurance on the farm, and another twenty-two were for exceptional skill in such unaccustomed work for young women (many of them from town) as rearing bulls, driving tractors, and shepherding.

One miss so distinguished herself driving farm tractors that she now has entire charge of the tractor department of a big firm of contracting engineers. Another girl conducted all the shepherding operations entirely alone on a large farm in Cornwall, where she had charge of 200 pedigree sheep. During her second lambing period the crops of lambs beat all previous records, and her "guy'nor" says she can throw a sheep better than any man he knows.

THERE was another young woman who saved a number of pigs from drowning. They had run on a farm pond that was covered with a thin layer of ice, and they all went through. The girl climbed a tree overhanging the pond and, by supporting herself by one of the boughs, dragged the animals out by their tails to the huge delight of the farmer owner. Another girl rescued a fellow worker when attacked by a bear. At great personal risk she held the animal down with a pitchfork while the other girl escaped.

One farm recruit, quite unused to horses, rescued a young pony that was being viciously attacked and bitten by a hunter. The foreman did not think it safe to venture near, but the young girl learner separated the animals.

Another girl to get the land V. C. was a farm volunteer worker who swam across a river to a small island on which was stranded a cow, and, roping the animal from midstream, drove it before her to the opposite bank. Also in the same class was another Peggy who rushed in and attacked a bull that had knocked down and was proceeding to gore a cowman. By kicking the bull's nose she drew its attention to herself, and the man was enabled to escape and, in turn, assist the girl. She later married the young man.

So, as it will be seen, British farm life is not all a humdrum business of tilling and sowing, and plowing and milking, and fetching and carrying, and when the lively young land girls were running things they instilled some ginger into the daily routine that made staid, comfortable old Farmer John Bull blink his eyes a bit. But he got to think a lot of his volunteer workers in the end.

With reasonable luck and plenty of solid work, he hopes for big things from this new year. He has thrown off the nightmare of the last five years, and is just starting off into his stride once more.



The British farmer's son goes to church in a silk hat

We Are Going to Have Better Nursery Stock

[CONTINUED FROM PAGE 11]

Professor Hendricks, and similar activities. But the leaders in this movement have realized that the education of the public was not the only thing needed. They are also endeavoring to educate their own members to grow and sell stock of the highest quality. The beginning has been made toward putting these higher standards into practice by employing an executive secretary, one of whose chief duties will be to work out this problem.

It is planned, eventually, to use an association trade mark which will stand for quality and service that the consumer, no matter how small his order may be, nor how little experience he may have had in the buying of nursery stock, can absolutely depend upon.

So earnestly did the delegates to the national convention desire to make sure that the American-grown nursery stock of the future will be as good as the best that can be grown anywhere in the world, that they provided for the appointment of a committee to see to it that a course in nursery practice be included in the work of the leading agricultural colleges in the United States, so that scientifically trained men, with high ideals for their profession, may be provided for the future.

All these things, of course, are but steps in the movement to make a "more fruitful and more beautiful America." They are only a beginning, but they are a good, solid, substantial beginning which cannot fail to mean the providing of better nursery products for you and me.

As to prices for nursery stock, it is not likely that they will ever again reach the old low level. Not only does labor form such a large part of the cost of production, but it is also impossible to use machinery to offset the increasing cost of labor as has been done in so many other lines of industry.

However, prices for nursery stock in the past have often been below the actual cost of production, just as they have for many other perishable soil products. Nursery stock that is ready to sell *must* be sold, or be put on the brush pile to go up in smoke.

The American Association of Nurserymen has sought the aid of the Department of Agriculture to help nurserymen with statistics and data on the industry which will be of assistance, just as the crop and price reporting services of the Bureau of Markets has been of assistance to the individual farmer in his own business. The nursery industry, from its very nature, can never be "monopolized," and "profiteering" is not to be feared.

Shipping Poultry Together, to Honest Men, Pays Us Bigger Profits

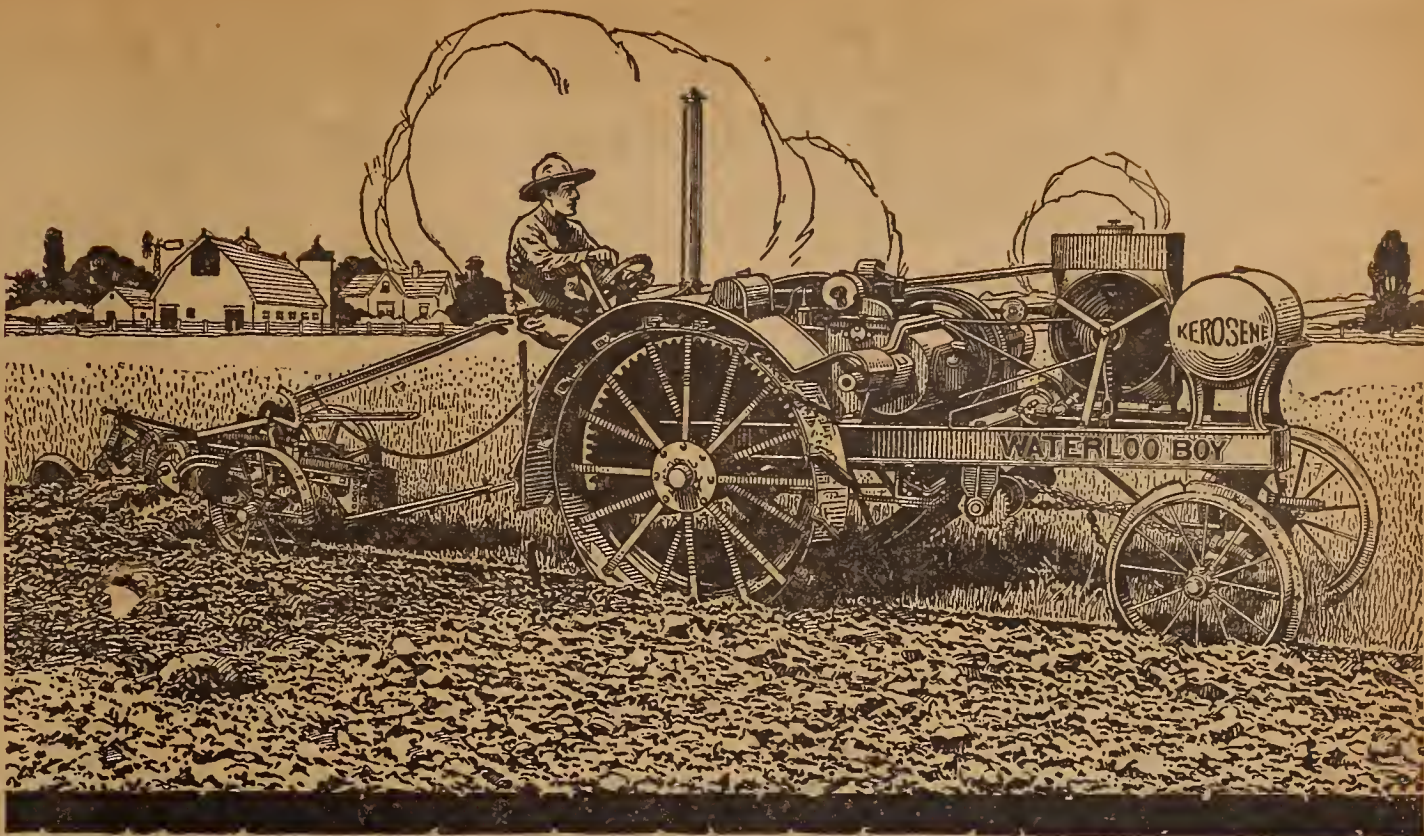
[CONTINUED FROM PAGE 15]

that is, to put in just as good fruit in the bottom as on top, and then filling the middle with the same kind. It saves time, trouble, waste, etc. The man getting that fruit does not have to sort it or break the package or waste time with it after he gets acquainted with the pack, and it costs less to sell stuff like that on commission.

"Well, if that works out with fruit and vegetables, why not with eggs? If a market man gets a reliable package regularly, and he knows he can bank on it, he makes more money himself, costs him less to handle it, and he can return more to the shipper. Why, I was in here one day when they opened a crate of eggs which had half a dozen camphor eggs packed in the center layers. You know, the kind you put in nests to keep vermin away. Well, the whole crate smelled of camphor, and I suppose when this shipper got his check back with half a dozen short and a cut of probably 15 cents on quality, he thought the commission man was robbing him.

"No, sir!" said Fred. "I'm all over the idea that a commission man is a parasite and a thief because he is a commission man, and I'm all over the idea that we want to drive him out of business. A good commission man is just whom the farmer wants to handle and distribute his produce in the large markets, because it's just as much a business as farming. A poor commission man, however, is worse than none.

"Get together enough to make shipments worth while," says Fred. "Ship to a good man, treat him right and square, and you have the best market possible."



Power You Can Rely Upon

To make you the most profit, each of your different farm operations must be timely. Often weather conditions call for extraordinary effort. It is then that you can count on the dependability and rugged power of the Waterloo Boy.

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BURNS KEROSENE COMPLETELY

It gives you dependable service at small operating cost. Its twin-cylinder engine develops full 12 H. P. at the drawbar and 25 H. P. on the belt, using kerosene as a fuel. A patented manifold converts every drop of this low-priced fuel into power. Two gallons of kerosene per acre is the average amount used when plowing.

The cooling system always holds the engine at the proper temperature. While the motor runs at the right temperature for perfect lubrication,

enough heat is maintained to insure complete combustion and full power. The radiator holds thirteen gallons of water. You don't have to stop in the field every few hours and fill it.

The Waterloo Boy is especially strong and rugged. Its various parts are designed to meet every possible strain. Every part is easy to get at. The engine runs without vibration. Its well-balanced weight provides proper traction in soft ground.

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Majestic Garden Plow and Cultivator. Wheel 24 in. x 1 1/4 in. rim. Mold board. Reversible shovel. Weeder and cultivating tool and wrench. Oak handles can be raised or lowered. Slotted foot changes draft to suit different soils. Wearing parts are carbon plow steel. Will last for years. See for yourself on the 30 days free trial. Shipped from factory in Northern Ohio. Shipping weight about 24 lbs. Just send the coupon—no money.

Not a cent to pay now. Just tell us to send this Majestic Garden Plow and Cultivator. Use it 30 days and then if not satisfied, return it and we pay freight both ways. If you keep it, send first payment 60 days after arrival—balance in five equal 60 day payments. Absolutely reliable but very simple and easy to operate. Great for farmer's wives and the boys and girls as well as grown ups. For hilling and weeding peas, beans, tomatoes, cabbage, corn or other crops planted in rows. Strong, but light. Well finished. (See description of parts at left of cut.) No better garden plow ever made. And only the coupon brings it. Order No. 453A-106. Price \$4.90. Pay only \$1.00 in 60 days. Balance \$3.90 every 60 days. SEND ONLY THIS COUPON. The Hartman Co. Dept. 2494 4039 La Salle St., Chicago. Send the Majestic Garden Plow 453A-106. It is not unlike the one you see in the picture. It will pay freight both ways. If I keep it, will pay \$1.00 sixty days after arrival and balance in 60-day payments of \$1.00 each until \$4.90 is paid. Name..... Address..... Send postal for Big Bargain Catalog of Gasoline Engines, Cream Separators and Farm Machinery. Free Book

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Look for the Red Ball when you buy Rubber Footwear, if you want perfect fit, real comfort, and More Days Wear.

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20 leading varieties, day old chicks. Safe delivery guaranteed. Postpaid. One of the largest and best equipped hatcheries in the United States. Catalog FREE.
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And allowed to points beyond. I ship quick from Buffalo, Minneapolis, Kansas City or Racine. Used by Uncle Sam and Agr'l Colleges. With this Guaranteed Hatching Outfit and my Guide Book for setting up and operating you can make a big income. You will also get my

Special Offers They provide easy ways to earn extra money. Save time—order now; or write today for my Free Poultry Book "Hatching Facts" It tells all. Jim Rohan, Pres.
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Complete Book on Rhode Island Reds including beautiful color picture given with two years' subscription—50c. Written by the best breeders.
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FRANK FOY Box 4 CLINTON, IOWA

How to Get the Most Out of Your Perennial Garden

By Lena C. Ahlers of Illinois

MANY people have the erroneous idea that when hardy perennials are once established they require no further attention, but I have found that, although they are easy to grow, in order to give the greatest satisfaction, each variety must be treated in the way best suited to develop its flowers and growth. I have found that some plants, such as dictamnus, lilies, peonies, yuccas, and so on, require several years to get established and come into their full beauty.

Usually, the longer these plants are left undisturbed the better results will be obtained. I have discovered that most of the late summer and autumn blooming varieties should be divided and reset each spring. Among these are asters, boltonias, golden glow, lychnias, pinks, sweet-williams, and so forth. The crown from which the original plant grew dies down, and many new plants grow up from it, which will give better results if divided and reset.

I find that tulips and hyacinths do much better if dug up and reset every three or four years, but the other fall-planted bulbs will give just as good results if not reset until they become crowded. It is, however, in most instances a mistake to think that large clumps will give more satisfaction than a small thrifty clump.

In my years of experience in growing flowers I have found no class more attractive than hardy perennials, and none adapted better to all conditions. A good garden soil, well enriched with fertilizers, is the greatest requisite. The plants are best transplanted in early spring, just as they

are beginning to send out shoots after their rest; but I have had excellent success with many in setting them over in the autumn. Iris, lilies, peonies, and other early-spring flowering bulbs are best set out in the fall. Never move plants when the ground is wet and soggy, or the weather unfavorable. I find that if each plant is given plenty of room to develop it will do much better, as most perennials grow and spread rapidly. Take care not to put too many flowers which bloom at the same time in the same place; try also to blend the colors so they will harmonize. A careful study of the varieties to be planted will usually result in a satisfactory arrangement.

During the summer I keep the soil stirred constantly around the plants, so as to let the air have free circulation. I give them a mulch of light material, which is of great benefit, and helps to retain the moisture during the hot, dry days, and also helps to keep down the weeds. I always stake and tie all the taller-growing species securely,

and if the supports are given when the plants are still small they will look more natural and give better results. By removing old flower stems, faded flowers, and seed pods, many varieties such as aquilegias, gypsophilas, hollyhocks, larkspurs, sweet rocket, and others, will bloom almost throughout the season. The removal of these will also improve the appearance of the border, and will keep the garden looking neat and tidy at all times.

When frost has killed at the soft growth I always cover my border with leaves or other litter. Do not cover too soon; for a little frost is beneficial to the plants. The protection should not be too heavy, or it will smother the plants, or induce them to come into premature growth in the spring. On the approach of warm weather I remove the covering gradually in order to harden the growth which the plants have made. Two or three days is usually sufficient for this.

Every year I grow more fond of hardy flowers. They get to be like old friends, coming back season after season to greet me, and surprise me too; for, like people, you forget sometimes how fine they really are, and that makes the pleasure of meeting them again all the greater. Perennials require such little care that I often wonder why more people do not raise them. I believe they would cultivate them more if they knew them, and if they would only try them out and see how much fun there is in having them.

There is such a wide range of color and form, and a succession can be easily arranged that will give you blooms from early spring until frosts chill all plant life. They are prolific too. By that I mean they divide and multiply, especially irises and peonies, so that you can keep enlarging your collection with no additional expense once you get started and have lots to give to friends besides.

Do not be impatient with them. Remember that it takes several years for them to get established and to do their best. Care taken in cultivation, fertilization, and winter protection will get blooms that will repay you with abundant bloom.

NOTE: If you like flowers and want to know anything about starting them, or if you are having trouble with those that you have and want to know how to help them, write to Flower Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

Take Time by the forelock
And plan the garden now;
When spring has come there'll be no time
Except for spade and plow.

—Exchange.



Photo by Nathan R. Graves

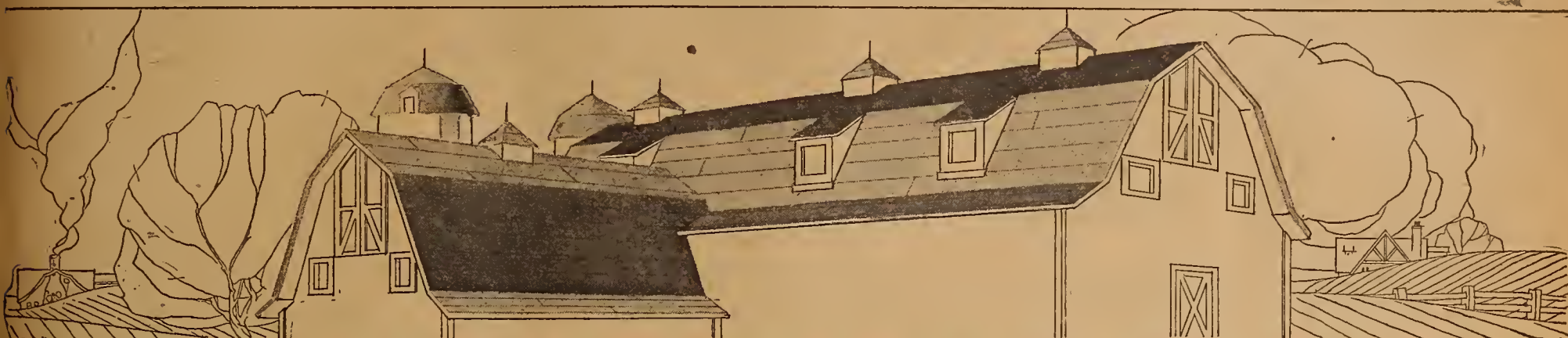
With a little trouble and a small expense you can have a border like this



Photo by Nathan R. Graves

Children who grow up among flowers aren't hard to keep on the farm

The area of roofs yearly covered with Certain-teed is greater than that covered by any other kind of prepared roofing. Certain-teed comes in rolls—both in the staple gray kind and the mineral-surfaced green or red, and also in green or red mineral-surfaced shingles for residences. Light, medium and heavy Certain-teed Roofings are guaranteed for five, ten or fifteen years respectively. The mineral-surfaced Certain-teed is guaranteed for ten years.



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Guaranteed for Fifteen Years

The heavy Certain-teed generally used for barn roofs is guaranteed for fifteen years.

There has never been a case where Certain-teed Roofing wore out on the roof.

But long wear is only one of the Certain-teed advantages.

Because it can be quickly laid by unskilled labor, where ordinary care is used, it greatly reduces building cost.

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And because it is fire retarding and spark proof, it greatly reduces the risk of loss by fire.

If your dealer does not carry Certain-teed, he can quickly get any quantity of it for you from a nearby warehouse or distributing center.

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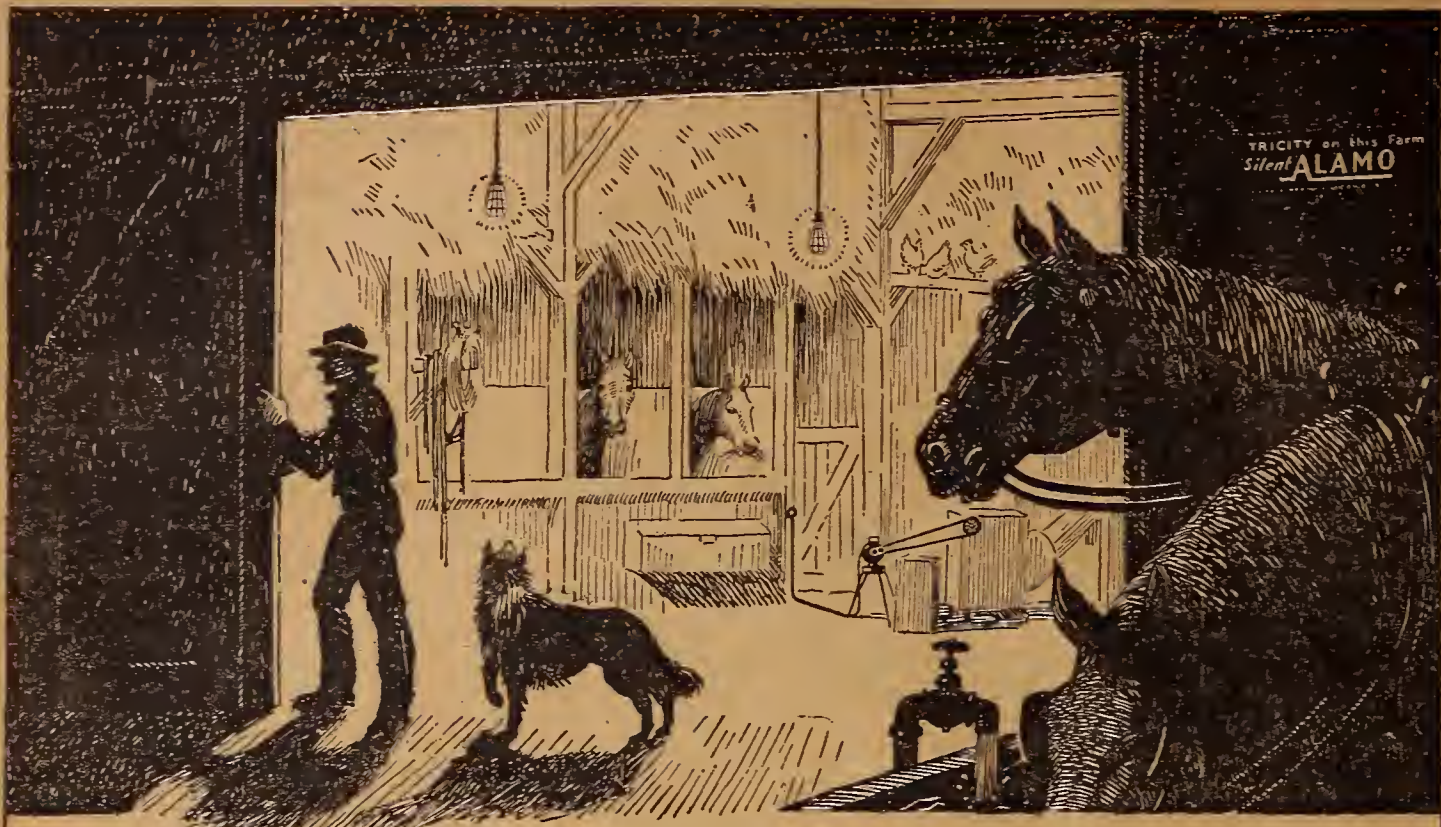
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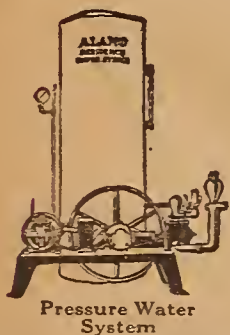
Safe Electric Light for Your Barns



Portable Power Stand



Electric-Operated Churn



Pressure Water System

THE most valuable part of your investment is housed in your barns. Is it safe? Look how dry—how tinder-like—everything is. How swiftly a little tongue of flame would spread and leave only a heap of ashes.

Yet you risk all by using dangerous kerosene lanterns.

Electric light is safe. It relieves you of this constant dread of fire. Then think of the brilliance in your barns—how much more work you can do after dark—how much better work—how much time you save. It's the only right light for any real farm. And it's easy to have if you install a

Silent ALAMO

FARM ELECTRIC POWER AND LIGHT PLANT

This is the scientific plant from which ruinous vibration has been eliminated. All the terrible shaking and rattling and banging are gone.

The Silent Alamo starts at the press of a button. A throttling governor controls motor speed; gives tapered charge to the extra size batteries. When batteries are fully charged, the motor stops. When oil or cooling-water reaches a low point, the motor automatically stops. No chance of overheating the motor or of scoring the cylinder.

The final result is a complete unit-plant that will furnish safe light for your house and barns, running water, power to operate household appliances and small power machinery, with a minimum of trouble and with utmost economy.

Write for the Silent Alamo Book

Tells all about ruinous vibration Tells why the Silent Alamo gives long, satisfactory, economical service, and many other important facts. Write today. A copy will be mailed promptly, free of charge.

ALAMO FARM LIGHT COMPANY

General Offices: 735 Tower Bldg., Chicago
Factory at Hillsdale, Michigan

ELECTRICAL CONVENIENCES—The Silent Alamo supplies power to operate all the labor-saving appliances illustrated. The Silent Alamo dealer can take your order for any of these Alamo accessories.

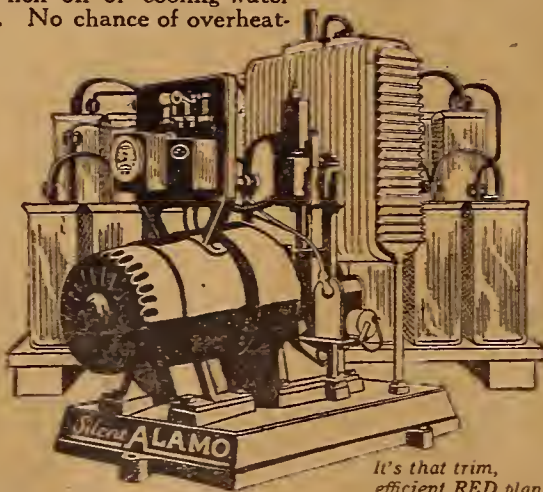
(41A)



Electric Washing Machine



Electric Sewing Machine Motor



It's that trim, efficient RED plant

This Plan Makes My Farm Work Easier

THE system I think best to save hard work and increase a farm's income is, first, to get your farm in a fine state of cultivation by using clover, alfalfa, and other legumes, and work your farm in a four-year rotation. You should plant corn and soy beans to be hogged off in fall. That alone saves a lot of labor and increases your income considerably, with hogs at present prices. Then there must be a silo of such size as to fit your farm and needs. Keep a bunch of fat cattle to eat the silage. Plant one field in silage corn and you will sure reap a big income from very little labor when these high-priced cattle are sold.

There can be no better way to keep your farm fertile, and at the same time increase your bank account, than by raising and feeding live stock. Never sell feed off a farm; always have something to feed it to and you get pay two ways—from what it was fed to and the manure you get to keep the farm up to a high state of cultivation.

The tractor is quite a labor saver, and usually brings in lots of clear money for its owner. It is worth while, saving a lot of hard labor, and if kept busy it will yield quite a revenue for its owner, by doing many various things.

The live-stock growing and feeding and using a good farm tractor beats hoeing and picking cotton, and will yield a far greater return for your labor.

Even the small "one-horse" farmer can save labor and increase his income in many ways. He can get one, two, or three good brood sows, raise some corn, soy beans, clover, and rape, turn them on it, and watch his purse fill up. A few sheep on a small farm also pay. The poultry industry is worth while these days, with eggs so high and chickens in proportion.

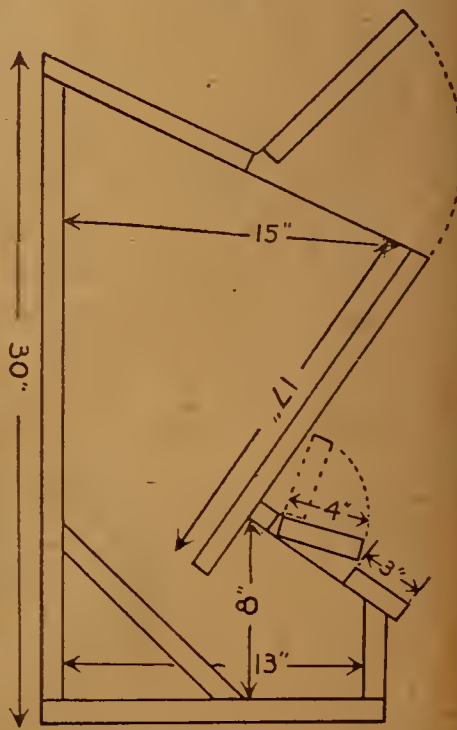
There is no need for the American farmer of to-day to have his nose on a grindstone and be bound up to some man by mortgages, for any man with hustle running in his blood can surely be independent. Everything fits the farmer to-day but the high prices story.

But the most important thing for us farmers is to use our brains, read good farm papers and other agricultural and live-stock literature, and keep our brains busy at all times—and I think a little farm bookkeeping helps too, for at the end of the year one can look up what he has done—what it cost, and the profit.

But be sure to keep your brain in your work, and a little hustle, and see your income increase and your hardest labor decrease.

A. A. H., Tennessee.

A Self-Feeder You Can Make



IF YOU feed a dry mash you will need a suitable hopper. The one shown can be made of inch lumber. The end dimensions only are given, as the length will depend on how much space you care to give to it. The small drop over the feed box is hinged, and can be hooked up in the daytime for the fowls to feed, and closed at night to prevent rats and mice from helping themselves.

Why Take Chances? Find Out What An Incubator Is Made of Before You Buy

Why Pay More

For only \$16.25 you can get these two unbeatable machines. Freight paid east of the Rockies. You take no risk—money back if not satisfied. You can order direct from this ad. Ask the publisher about us.

Both Machines Freight Paid For Only

\$16.25

Made of California Redwood

Send for our Free Catalog and we will send you a sample of the material used in Wisconsin Incubators and Brooders. Then you will know which machines are built best, which will last longest and which will give you the most value for your money. One good hatch will pay for a Wisconsin outfit and more. Why take chances? We give you 30 Days' Trial

MONEY BACK IF NOT SATISFIED

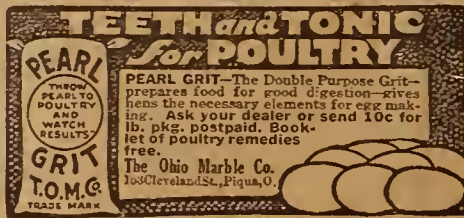
10-YEAR GUARANTEE

180 Egg Incubator and 180 Chick Brooder both for only \$20.00

Wisconsin have hot water

heat, double walls, air space between double glass doors, copper tanks and boilers, self regulating. Nursery under egg tray. Made of finest, select, clear CALIFORNIA REDWOOD, not pine, paper or other flimsy material. Incubator finished in natural color—not painted to cover up cheap, shoddy material. Incubator and Brooder shipped complete with thermometers, egg tester, lamps, everything but the oil. This is the best outfit you can buy. If you don't find it satisfactory after 30 days' trial, send it back. Don't buy until you get our new 1920 catalog, fully describing this prize winning outfit. WRITE FOR IT TODAY. You can't make a mistake in buying a Wisconsin. On the market 16 years.

WISCONSIN INCUBATOR COMPANY, Box 46 Racine, Wis.



"BABY CHIX" 10,000 per week after Feb. 1. 20 varieties, order early. Write for price lists and order blank. THE SPENCER HATCHERY Spencer, Ohio

THE LOWEST Priced Incubator Per Chick Hatched

This is proved by the "Successful" 27 year record. You want the "Successful" for a sure success this year. Sell more eggs and chickens—help feed the world.

"SUCCESSFUL" INCUBATOR or BROODER Write me a postal for book and prices. "Proper Care and Feeding of Chicks, Ducks and Turkeys" sent for 10 cents. "Successful" Grain Sprouters furnish green food—make hens lay in winter. Ask about my high-grade poultry—all leading varieties.

J. S. Gilcrest, Pres. DES MOINES INCUBATOR CO. 61 Second St., Des Moines, Ia. POULTRY LESSONS FREE TO EVERY CUSTOMER



Colonel John S. Mosby and Captain Franklin Williams—famous leaders of Civil War days

Two Famous Fighting Farmers

FARMERS can fight, when they have to—and they do a mighty good job of it too. The Minute Men of the Revolution were mostly New England farmers. And here we have two famous warriors, both farmers—Colonel John S. Mosby and Captain Franklin Williams, organizer and commander, respectively, of the famous "Mosby's Men" of the Civil War.

This is the first, last, and only picture they ever had taken together. They were standing on Captain Williams' farm near Fairfax courthouse, Fairfax County, Virginia, on the very ground over which they fought against the Union Army more than half a century before. Both veterans died shortly after this picture was taken by the writer.

A large price was put upon Colonel Mosby's head by the Union Army, for his capture dead or alive; but, although he was gured in many a close call, he always managed to escape in an almost uncanny manner.

I spent several summers on the old Williams farm, and a short time before the death of Colonel Mosby had the pleasure of meeting him there, and of hearing the two old veterans talk over "old times."

Colonel Mosby had a great aversion of having his picture taken, and it took a lot of persuading to get his permission. He would not agree to it at all unless I promised to allow him to destroy the negative after I had three prints made—one for him, one for Captain Williams, and one for myself. After the pictures were printed and we each had a copy, I immediately turned the film over to him, and he destroyed it on the spot.

Captain Williams' farm was the scene of numerous skirmishes between Union troops guarding Washington and Colonel Mosby's forces. Upon several occasions Union prisoners were quartered temporarily in the Williams house.

The old Williams farmhouse was repaired and renovated, and leased by the U. S. W. C. A. of Washington as a boarding house for a few of the women workers during the European War.

WENDELL M. WHITING.

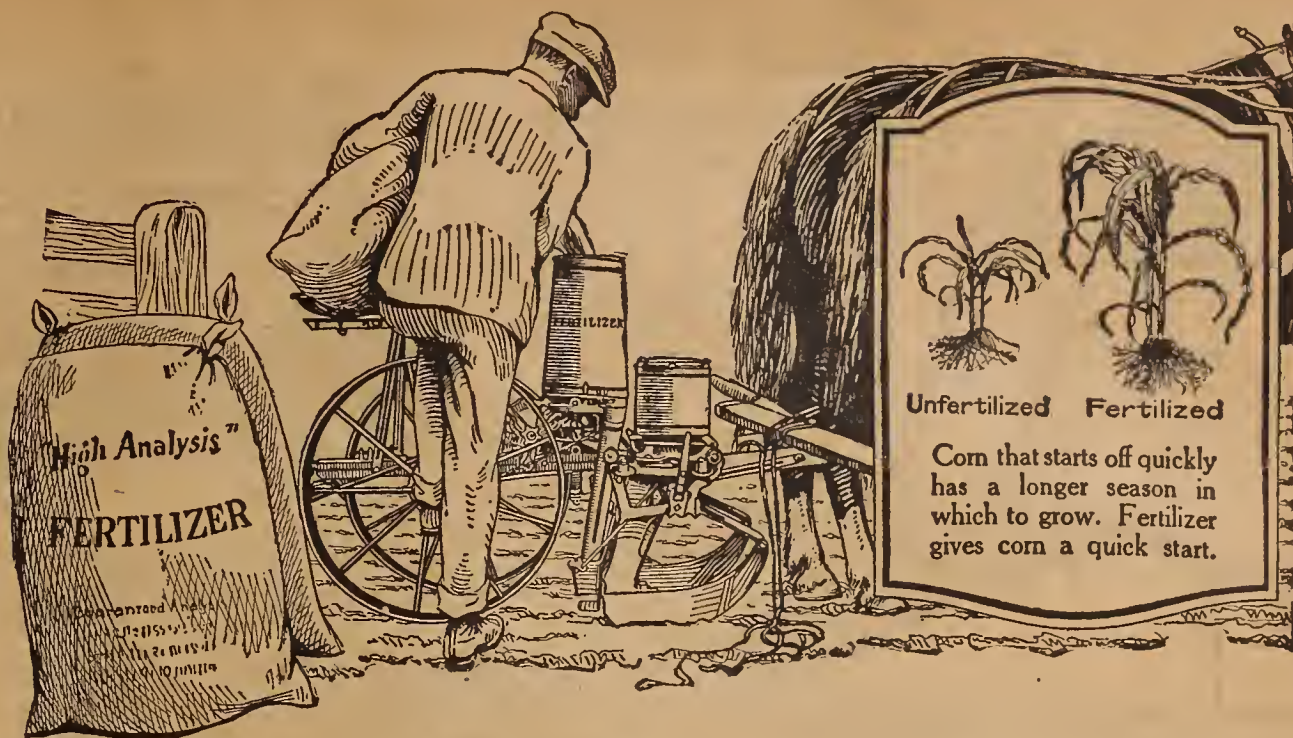
Snap as Time Savers

REMEMBER when I took the halters off my horses by unbuckling the strap at went over the head. It is still done this way on many farms, so I want to tell you a much easier way that I and dozens of other farmers use.

Have a big snap on the end of the throat chain, and snap it in the big ring that is worn into most halters. Then slip the head cap off over the horse's ears. It is much quicker and easier to do it this way, and works in the dark in half the time. Furthermore, when a halter is adjusted for a certain horse the snap keeps that adjustment, while if you unbuckle it every time you use one hole to-day and another one the next time.

I have also saved much bother when letting horses out in the yard to exercise by giving a snap on the end of the rope or cap that the horse is tied with. There are many different kinds of snaps, and I use the ordinary bolt snap the least of all. A snap with a spring like a harness snap is much better, and the twisted wire snap is best of all, because it is almost impossible to lose it.

E. R.



Fertilize Corn for a Quick Start

AS SOON AS the young corn plant starts, the rootlets begin reaching out for plantfood. If they find it, in available form, the plant goes ahead, sturdy and green. If they don't find it, the green fades—you have often seen the sickly yellow color—and there will be no growth until a supply of available plantfood is found.

Nature provides ammonia in the vegetable matter of the soil. Warm weather brings decay, and this releases ammonia for the growing crop. But while waiting for warm weather corn should have ammonia supplied by fertilizer. You cannot afford to let the growing crop lose a single day.

Corn is a heavy feeder. It must have ammonia for a quick start and steady growth. It must have potash to make strong, stout stalks which bear big, heavy ears. It must have phosphoric acid to fill and harden those ears as well as to make strong and vigorous roots.

"High Analysis" Fertilizer for Corn

One of These Will Fit the Conditions on Your Farm
The figures represent percentages of ammonia, available phosphoric acid and potash, in the order given:

For sandy and loamy soils, and all worn soils, especially where the manure is short—

2-10-6 or 2-10-4 or 2-12-2

For use on clay loams or other soils which contain plenty of potash—

2-12-0

For use where the soil has plenty of available ammonia; where plenty of manure is used; where legumes are plowed under—

0-10-8 or 0-12-4 — 0-12-2 or 0-16-0

Our Automatic Formula Finder will help you select the right fertilizer to use on your other crops. Be sure to send for one—no charge or obligation.

Our booklet, "More Plantfood for More Corn," tells how to make bigger profits from your corn crop. Send for a copy. Also ask for our Automatic Formula Finder which will help you to select the right fertilizer for each crop. A post card request will bring both of them.

SOIL IMPROVEMENT COMMITTEE of the National Fertilizer Association

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SOFT-HEAT
Greatest Incubator Discovery in 50 Years.
Insures Strong, Healthy Chicks from every good egg. Iron-Clad Guarantee.
Porter Soft-Heat Tubeless Incubator combines hot air and water. Automatic control of heat, moisture and ventilation. Center heat plan, round nest, eggs turn semi-automatically without removing tray—saves time and money. Simple, Safe, Sure. Express Prepaid.
Write for Big New Free Book.
PORTER INCUBATOR CO., Box 132, Blair, Nebraska

BEST FOR BABY CHICKS



3 Pans 50c POST PAID 6 Pans \$1

Fit any Mason Jar—Easy to clean—Sold by AMERICAN POULTRY JOURNAL, 52 Peterson Bldg., Chicago
World's Oldest—Largest—Best Poultry Paper—60 cents a year
Price increases July First—Order today.

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BIGGEST HATCHING
Value Ever Offered

Investigate the Ironclad Incubator before you buy. Get my new catalog and learn why the Ironclad is the safest and best incubator. It tells how they are made and why they are better. My special offer of Iron covered incubator and roomy brooder for only \$17.25 freight paid east of Rockies

30 DAYS' TRIAL
Money Back If Not Satisfied
is the greatest incubator offer of the season. You can use the machine for 30 days and if not satisfactory, we will refund your money and pay return freight charges. Machine comes to you complete, ready to use, and accompanied by a 10 YEAR IRONCLAD GUARANTEE

Both for \$17.25
Freight Paid East of Rockies

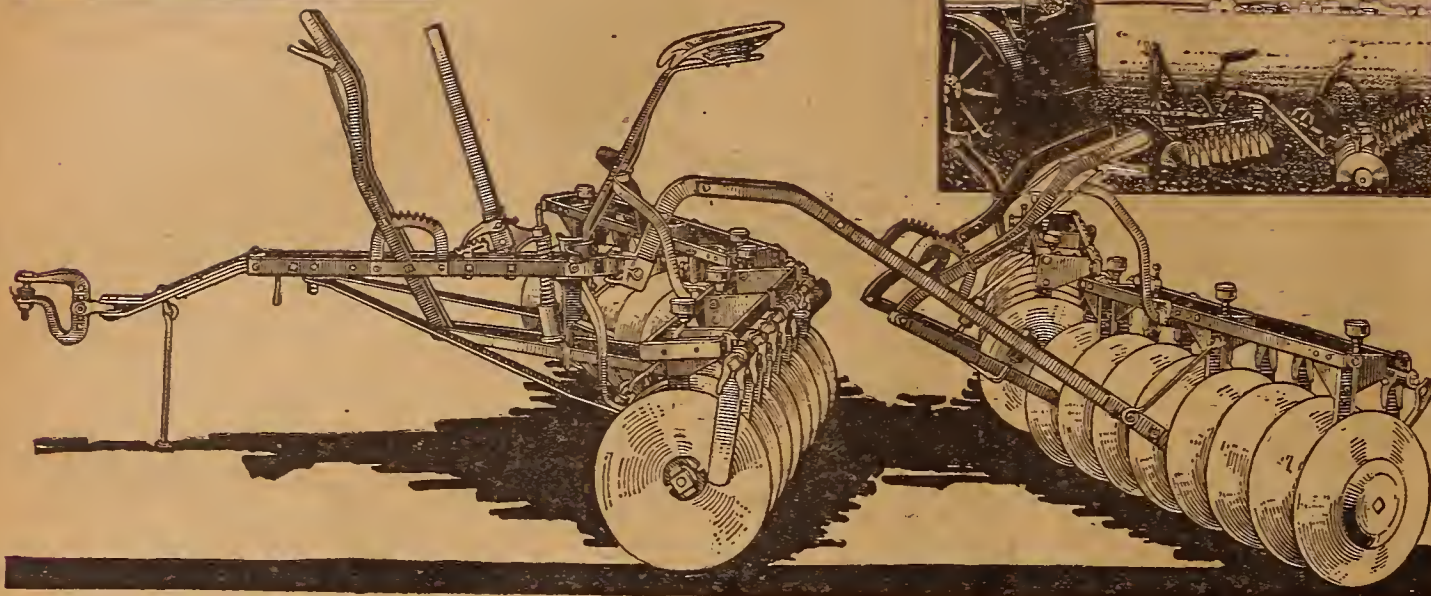
150-EGG Ironclad Incubator
Don't class this big galvanized iron covered, dependable hatcher with cheaply constructed machines. Ironclads are not covered with cheap, thin metal and painted like some do to cover up poor quality of material. Ironclads are shipped in the natural color—you can see exactly what you are getting. Don't buy any incubator until you know what it is made of. Note these Ironclad specifications: Genuine California Redwood, triple walls, asbestos lining, galvanized iron covering. Large egg tray, extra deep chick nursery, hot water top heat, COPPER tanks and boiler, self-regulator, Tyco's Thermometer, glass in door, and many other special advantages fully explained in free catalog. Write for it TODAY or order direct from this advertisement.

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MADE OF CALIFORNIA REDWOOD
150 Chick Brooder



For Either Horses or Tractor



A Full Line of Quality Implements For You

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John Deere Implements are Distributed From All Important Trade Centers. Sold by John Deere Dealers Everywhere.

A GOOD disc harrow that you can use either with horses or tractor has a special advantage these days. It makes good work certain, no matter which pulling power you use, and it saves you the cost of a new harrow when you change from one pulling power to the other.

JOHN DEERE PONY TRACTOR DISC HARROW

This double-action disc harrow quickly can be converted into a horse-drawn, double or single-action harrow by using the hitch that we can furnish for that purpose.

Does a complete job of disking—the John Deere Pony Tractor Disc Harrow penetrates and pulverizes thoroughly because the low hitch and the low coupling between front and rear gangs hold discs to their work.

This harrow is flexible—each gang works independently—obstructions in the field do not lift the entire harrow out of the ground. And the front section can be furnished

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Light running—There is no dragging around corners—the rear gangs trail properly and run steady because the reinforced goose-neck connection to rear gangs is attached ahead of the front gangs.

Can be used with any standard tractor. The John Deere Pony Tractor Harrow clevis is adjustable to suit the height of any standard tractor drawbar.

Free Book "Bigger Crops from Better Seed Beds"—24 pages attractively illustrated—tells when and why to disc. Also describes the horse-drawn and tractor harrows to use. Write today to John Deere, Moline, Ill., and ask for booklet PT-58.

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Clear your stump land cheaply—no digging, no expense for teams and powder. One man with a K can rip out any stump that can be pulled with the best inch steel cable.

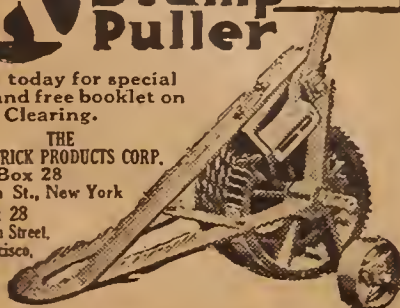
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Makes Trucks 100% efficient. Write for Free Booklet "Truck Time Insurance." Of interest to every truck owner. Challenger Co., Dept. F3 Oshkosh, Wis.

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A Free Trial Package is Mailed to Everyone Who Writes

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powderpaint. It comes in the form of a dry powder and all that is required is cold water to make a paint weather proof, fire proof, sanitary and durable for outside or inside painting. It is the cement principle applied to paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 41 North Street, Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.



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Which Fertilizer Should You Use?

[CONTINUED FROM PAGE 23]

was not over eight inches high, while on the fertilized plots it grew tall and was a lusty green. By actual weight, the fertilized plots outyielded the others several times. Another time, Father tried potash on an old creek bottom that was in alfalfa, but which was always unhealthy and crowded with foxtail grass. Where the potash was applied the alfalfa grew tall and vigorous, and the foxtail entirely disappeared. This strip could be very plainly seen clear across the field. Again, nitrate of soda was broadcasted in a cornfield in July. Very little effect could be detected in the growth of the corn, but the next year the same field produced one of the best yields of wheat I have ever seen. It threshed out 42 bushels to the acre, and a good stand of alfalfa was obtained with it, so the fertilizer was not wasted as the first year's results indicated.

In connection with the use of potash, care should be taken not to use a fertilizer that contains an excess of borax, advises the Department of Agriculture. A large portion of the potash available for 1920 contains more or less borax, which is very harmful if used in too great quantities.

If the fertilizer contains more than two pounds of borax per ton it is thought it may be safely used, provided proper attention is paid to the method of application and the amount applied per acre. If it contains .2 per cent of borax, 1,000 pounds per acre may be used in the drill without exceeding the two pounds per acre, the limit of safety. If it contains .4 per cent, 500 pounds in the drill would not exceed the apparent limit of safety. If, on the other hand, the fertilizer is broadcasted and contains .5 per cent borax, then a ton may be applied broadcast without exceeding the limit of 10 pounds per acre of borax, the limit of safety for this method of application. If it contains 1.0 per cent borax, then an application of 1,000 pounds per acre could be made without exceeding the limit of safety for this method.

It doesn't pay to take any chances with valuable crops, and it will therefore pay to watch your fertilizer tags carefully.

CONDITIONS affecting the production of fertilizer materials, and the resultant prices, are even more uncertain than they were during the war. A big demand is expected, for, in spite of America's big yield, the world is still hungry. Big prices always mean heavy fertilizer demands.

Labor conditions have very seriously affected the fertilizer industry. The Florida phosphate fields, where 77 per cent of the total rock phosphate comes from, have been more or less tied up with strikes since May, 1919. Production has been very greatly cut. It therefore looks as though there would be a real shortage of phosphatic fertilizer material. Basic slag is excellent, and is preferred by many to acid phosphate. It possesses the advantage of being alkaline in its reaction, and it is therefore better for a soil that has a tendency to be acid.

It is difficult to say just what the situation will be as regards potash. As yet very little potash has come in from the Alsatian and German mines. There is a great demand in Europe for potash, due to the curtailment of supply all during the war. Europe, being closer, is better fitted to compete for this supply than we are.

Nitrogen-carrying fertilizers will be available in sufficient quantities, it is believed, although prices are likely to remain high. But it's better not to depend on commercial nitrogen, unless you are raising truck or other special crops, or have special soil conditions to contend with. You will find that it pays better in the long run to make the air furnish most of your nitrogen through the legume-bacteria route.

But even though fertilizers are high you will find that they pay. Crops and live stock are high, and you can't keep the mill going without water. In this case the water comes out of the fertilizer bag. Remember that the high-analysis fertilizer pays best in increased yields, lessened freight charges, and decreased labor costs. It will pay you well to purchase through your co-operative association, or club in with your neighbors and get a carload. And the earlier you order, the better service you will get.

EDITOR'S NOTE: Our corresponding editors are always glad to help you with any of your fertilizer problems or with your farming plans, if you write to them.

WINCHESTER

1866

1920



Winchester .22 Caliber
Repeating Rifle, Model 06

YOUR BOY SHOULD BE TAUGHT TO SHOOT

HAS your boy's voice begun to change? Has he commenced wearing suspenders? Is his first pair of long trousers just around the corner, so to speak? Then his yearning for a gun demands your attention.

He will get hold of one sooner or later—it is his natural instinct. He needs your help now. Earn his lifelong gratitude and add to your own pleasure and self-esteem by giving him *the proper start*.

Naturally, you want him to become a good shot—to be trusted to handle a gun properly under all circumstances. Just as a boy should learn to swim.

He must be *taught*.

Any older person may act as instructor who will properly supervise his shooting and impress upon him the right principles. These can easily be obtained in printed form, with illustrations, at any hardware or sporting-goods store that sells Winchester Guns and Ammunition.

Or your boy may receive his instructions through membership in the Winchester Junior Rifle Corps, for which there is no charge. And he can shoot for the W. J. R. C. medals and diplomas—Marksman, Sharpshooter, and Expert Rifleman—regardless of where he practices or receives instructions.

Teach him yourself if possible. A boy's best shooting instructor is his father. And the companionship developed between them when they share the sport is rarely equaled in any other pastime.

If you would like to teach a few other boys to shoot along with him—a good plan, stimulating effort—your dealer will obtain a complimentary W. J. R. C. Instructor's Manual for you. It will give you the complete W. J. R. C. program, including full details concerning how to conduct the tests for the medals already mentioned, one of which is awarded any boy who makes the required score.

Go to your local hardware or sporting-goods store today and ask to be shown the Winchester .22 caliber Rifles for boys. The Model 06 repeater, one of which appears in the above illustration, is the most popular boy's rifle. But if you prefer one of the single-shot models, you can depend upon its being equally accurate. The steel in all Winchester barrels is of uniform quality and all are bored alike.

Buy the boy a .22 caliber Winchester Rifle—or an official W. J. R. C. Range Kit, containing everything needed, including ammunition. Get out on the range along with him, improve your acquaintance, and brush up your own shooting.

We invite you to write to us for any additional information or advice you may wish.



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It does the work!



Boyhood on a Middle-West Farm

[CONTINUED FROM PAGE 12]

What curious and interesting things some of our old school geographies would be now!

This schoolhouse was equipped with the old-fashioned back-breaking puncheon seats, without backs to lean against. For writing purposes there was a broad board across one end of the room, fastened to the wall. If there were more pupils than the board could accommodate at one time, classes had to change. When one class was through with its writing exercises another took its place.

Of course, corporeal punishment was practiced by the pedagogues at this school as in that day generally. That was a part of the curriculum. Sometimes, however, a severer punishment was inflicted on the disobedient pupil. The recalcitrant, if a boy, was picked up by the collar and flopped down with the girls on their side of the house. Such punishment as this usually kept the boy's nose in his book for as much as three minutes! Or mayhap the culprit was made to stand in a corner.

IN THE face of being charged with falsifying the record, I will say that I never felt the master's rod but once, and then I wasn't guilty, if you will believe that. It was while my class was at the writing board and, of course, our backs to the room and to the teacher. Someone was guilty of a misdemeanor, and as the teacher couldn't decide on the culprit he walked behind us and laid his long switch on the backs of all. I suppose he got the culprit all right, but I didn't know which one of us it was.

I think one reason why I escaped punishment at school was because I was assured by my father that if he ever heard of my getting a whipping at school I could depend on another at home, and by this time I was well enough acquainted with Father to know that he meant it. So I governed myself accordingly. I think this explanation will sound more reasonable than if I should say I was such a good boy.

Father was a strict disciplinarian, and required prompt obedience, yet he always allowed us boys a good time consistent with the work on the farm. So we had frequent Saturday afternoons for recreation or for fishing, or swimming in the creek which ran through the farm; also an hour or so after showers we could have for fishing. This was a splendid time for the sport. Sometimes we ran down to the creek and fished after night. We would build up a fire on the bank, as we believed the light attracted the fish; but we fished from under the bank, or at least out of the direct line between the fire and the water. The creek was full of fish, such as catfish, sunfish, perch, etc., and in a short time we could get a string as long as our arm on hook and line.

We had an uncle living near-by, who was a great fisherman. I asked him one day how he could catch so many fish. "I spit tobacco juice on the bait," said he. "The fish are very fond of it." That was no help to me, for I did not use tobacco. So I didn't get his secret, if he had any. I think it was because he liked to fish alone, and was very quiet about it.

We did a great deal of our fishing from a canoe that Father had made and kept in the creek nearest the house. As the creek was a good-sized stream and cut the farm in twain, the canoe as a means of crossing from one part to the other was almost a necessity, there being no bridge there. I think the canoe was made from an ash tree some thirty or more inches in diameter, a cut fifteen or eighteen feet long being taken. Leaving a space at each end for a seat, it was hollowed out until a thickness of about two inches for sides and bottom was left. Many canoes are treacherous, and will tip over and spill you out into the water without much warning, but this one was the most dependable canoe I ever saw. It seemed to be absolutely safe, for we used it for our base a great deal when in swimming, and it defied all our efforts to overturn it. This canoe Father and a neighbor used in washing sheep.

I don't know whether this custom of farmers washing their sheep before shearing has died out or not, though I have not seen the thing done or heard of it for many years. I feel certain that there are many people now in middle life who never saw a sheep washed. The fleece is washed or scoured now after it is taken from the sheep, and not before—a better way, certainly. A sheep was put in the water by an attendant standing in the canoe, and soused around, up and down, as long as seemed necessary, and then helped out and up the bank, for with the fleece water-soaked it had to be helped, and put into a clean pen with straw to keep it out of the dirt. It might be supposed that this treatment could not remove much of the dirt from the sheep's fleece, but there was certainly a great contrast between a washed and an unwashed sheep.

This custom gave rise to the term, "The Great Unwashed," which has been applied to one of our political parties since.

Father was also some sport himself, but instead of fishing he liked best coon-hunting at night. Coons were plentiful in the creek bottom, and in roasting-ear time did considerable damage to the corn. With his dog and perhaps a neighbor who liked the sport, and with an ax and lantern, they would spend half the night in a tramp through the woods, and nearly always with success. Sometimes we boys would be permitted to accompany them, but tramping through the woods at night by the dim light of a lantern was rather fatiguing to our boyish legs. If, in these night raids in coon kingdom, a coon was run up a large tree and could not then be brought down, Father would wrap his coat around the tree, go home, and return in the morning for his coat and coon.

While I am on the subject of coon-hunting, though chronologically a little out of order, I will relate a daylight coon hunt my brother and I had after we had moved West a few years later.

We were hunting mainly for squirrels, which were quite plentiful, when the dog ran a coon up a very large cottonwood tree. The coon ran out on a large overhanging limb, into a hole, and out of sight. The tree itself was unclimbable, as it had no branches within reach, but a small tree grew up close by that I could climb and thus reach the large limb that the coon had gone out on. Cutting a stick that I could use as a prod, I climbed out to the hole that we had seen the coon enter. I had given but one prod into the hole when out came, not one coon, but five—two full-grown ones and three smaller. I then and there came near having a fit of stage fright, or, more properly perhaps, coon fright. Five coons in that one hole were certainly more than I had expected, and then two of them nearly ran over me in trying to get by and down the tree. The other three ran farther out on the limb. I think we captured but two of them, the others getting up other big trees where we could not get at them.

TO RETURN to Indiana: Mother always kept chickens, guineas, and a flock of geese. A gander will sometimes become very bossy, as if he had charge of all living things on the place. Such a one was in this flock. A grown person need not fear an old gander, but children have been seriously injured by the poundings of their wings, and they can strike hard blows, too, for their wings are strong.

One day I was crossing the barn or feed lot where the geese were, when this old gander came at me with outstretched neck and bill wide open, and hissing like a broken steam pipe. I picked up a large corn cob and flung it at him. To this day a grin will spread over my face when I visualize the surprise of this old gander, for the cob went sideways square into his open bill and stuck there. It might have split his head open had it been thrown with a

[CONTINUED ON PAGE 75]



It's Just Fun to Wash With the Meadows

TRADE MARK REGISTERED

Meadows Power Washing Machines make wash day a pleasure for the housewife. No hard work or drudgery to washing clothes when a Meadows Washer is used.

Washes clothes perfectly in half the time at half the cost of old way. No wear or tear on clothes, absolutely safe to use.

Swinging wringer wrings clothes from washing machine or rinsing or blueing water. Foot pedal control of wringer. All working parts enclosed means absolute safety.

Meadows Washers are made for either belt power or with electric motor for any current.

Most moderate priced washing machine on the market and most effective.

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More signs like this might be the means of preventing serious accidents

Signs That Save Lives

TREACHEROUS highways and devious curves in streets of the city or in country roads—sometimes labeled “dead men’s curves”—need no longer be death traps if a series of sign posts sanctioned by the El Paso, Texas, Chamber of Commerce obtain merited usage.

The highway warnings do not take the form of a mechanical device or automatic signal, but common-sense inscriptions like these stare the motorist in the face: “Private cemetery at bottom of hill for reckless drivers,” and “Road up this hill is not fool-proof.” The motorist smiles at the death mark on the sign, closes the throttle, fastens the brake, and then thanks the El Paso Chamber of Commerce for its thoughtful suggestion. S. R. WINTERS.

Our “Magazine Johnny”

HERE is a little thing that has saved the whole family much worry and trouble: We are all great readers, but, like most busy men and women, my husband and I never could keep track of the time any magazine subscription ran out, therefore it would invariably come at a time when there was no change in the house, and when we were too busy to go to the town and bank. So we have a funny little bank, dubbed “Magazine Johnny,” and into this each birthday my husband dumps a dime for each year of his age, I place a nickel for each year of my own age, and each child on its birthday places a penny for each year its age.

The result is that none of us ever miss the money, there is always the price handy when a favorite magazine or farm paper is to be renewed, and as the money is more than they come to, and as it increases every year, whenever we gain enough in the fund we subscribe for another magazine or paper. And hanging over the bank, on the wall, is a large card with title of each magazine and time it expires.

Anti-Scorching Device



THE most careful of cooks will, with the many things to see to, occasionally relax her vigilance for a second, and something on the stove will burn. A simple device to prevent this mishap is a pie pan, the size of the bottom of the kettle,

generously perforated with small holes. This pan rests bottom side up on the bottom of the cooking utensil, and prevents the cooking food from coming in contact with the overheated bottom. The perforation can easily be made with a hammer and wire nail.

J. L. H., Ohio.

To Make Cut Glass Sparkle

TO KEEP my cut glass in sparkling condition I wash it in warm—never hot—soapsuds. I use a brush to wash the glass with, then rinse it in bluing water of the same temperature, and polish. The bluing water seems to make it sparkle like diamonds.

Mrs. F. S., California.

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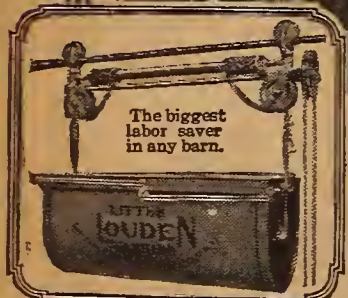
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One Man Does Work of Several

Human labor is over half the cost of dairying. Over 90% of this labor is done in the barn. It is a proven fact that you can cut this labor in half with Louden Steel Stalls and Stanchions, Feed and Litter Carriers, Automatic Quick Detachable Water Bowls, etc.—besides showing a yearly cash increase in the productiveness of your cows, which more than pays for Louden Equipment.

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You can always recognize Louden Equipment by its simple, sturdy, smooth, curve construction, which makes it trouble free, durable, safe and sanitary. An equipment which will fit your present barn, which you can install at moderate cost, and which will show a big daily profit is shown in our

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How We Made Poultry Pay

WE GREW into the poultry business on our farm so gradually that our mistakes were not very expensive. The chickens paid for all equipment, and helped keep the bank account on the right side of the ledger besides. I want to state in advance that we have done nothing extraordinary; indeed, the average of laying was not high, but we made money, and by breeding up the flock we expect to do better.

The hens did fairly well in the fall and winter, with the exception of the year 1917. That year was a hard one for the poultry business. The price of eggs did not advance to keep pace with the price of feed, and we found it difficult to get feed at all. Twice in the fall and winter of 1917 we got some bad bran. The hens refused to eat their mash, and there was no other bran to be had at any price. This stopped their laying twice, and it took time to get them back, so they did not make a good showing.

We thought it was worth while to try to secure better eggs in winter, so we bred only winter layers. During the months of December, January, and February we trap-nested to tell which were laying. We used the spiral colored legbands, and put one color on for November, another for December, and still another for January. From these winter-laying hens we selected from 40 to 70 of the best-looking ones that had the most legbands, for our breeders for spring. We trap-nested them for two or three days about the seventh and twenty-first of each month, marking all that laid in that month with the same legband.

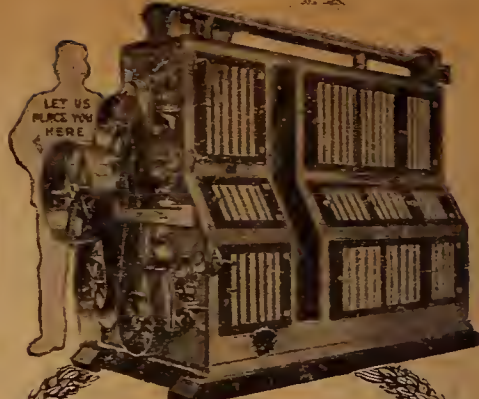
Every two or three years we also sent off for males to put with our flock. This year we are going to get the best we can find, and believe it will pay us. Now that such strides have been made in judging hens by the pelvic-bone test, I do not know that trap-nesting will be necessary, but we knew nothing about that until recently.

I DON'T think there is any short-cut to fortune by way of the poultry-farming route. One works for all he gets, but that holds true in most walks of life. A person who is not physically able to farm or do heavy work can care for a fair-sized flock of hens. I am not a strong woman, but, besides doing a good share of my own housework, I have taken the entire care of our chickens until last year. Since then my husband has kept the henhouses clean, and helps in other ways in bad weather. But the poultry is a side issue with him.

In the summer of 1912 we moved on a farm, knowing nothing about the care of chickens. There was a small flock of hens on the farm, which were very indifferent layers. A friend sent us nine Ancona eggs, saying she believed we would like that breed of hens. We raised four pullets, which were such persistent layers that winter that we concluded they were the breed of hens we wanted. In 1913 we raised 32 pullets from these four, making 36 in all. In 1914 we got an incubator and hatched about 300 chickens, raising about 115 pullets. We used lamp brooders, and kept them warm, losing only one chicken from sickness that year, with the exception of some that were hatched cripples. The hawks got quite a few, though, and at night rats got into the henhouse and destroyed a number. We decided that a cement floor was a necessity. This was lesson number one.

In 1915 we didn't try to raise any chickens, as I thought I had all I wanted. That year we had our first experience with roup and cholera. The henhouse had cracks behind the roosts, and we had several cases of roup. It was situated on a side hill, and in the spring the water came in, making the floor muddy. Cholera broke out. We learned we must have no cracks near the perches, and must have the henhouse in a well-drained location with a raised cement floor—lesson number two. However, I doctored some and had some killed, and our loss was not heavy.

In 1916 I decided to keep books on the poultry, so we would know what they were doing. On January 1st, we had a flock of 130 hens. The following table shows the feed the hens consumed, with the cost from January 1, 1916, to January 1, 1917. It also shows the number of eggs laid, with the price received for them. Living in an out-of-the-way corner as we do, we cannot get as high prices for eggs as more favored localities do, and we have to pay a higher price for feed. We shipped most of our eggs to a commission man in Memphis, a



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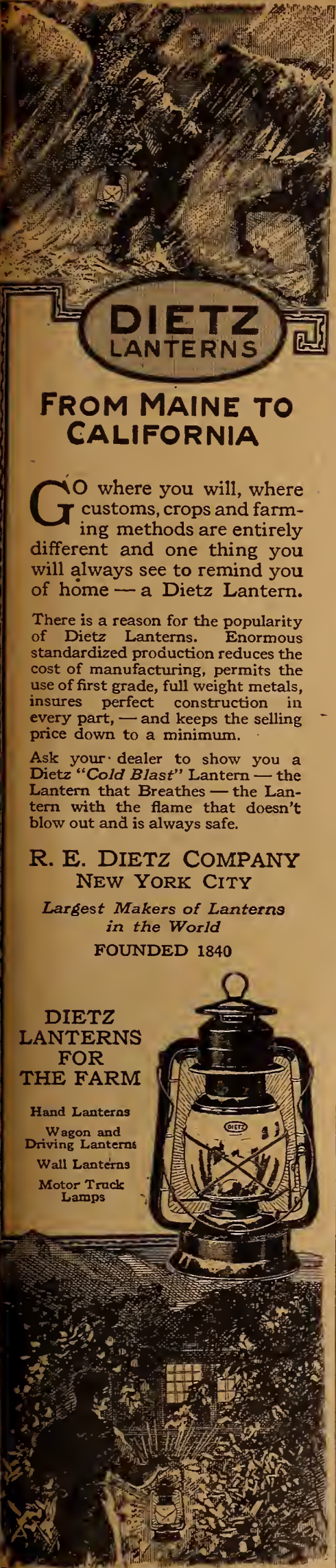
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distance of about 200 miles, and the price
is net after deducting expenses:

RECEIPTS IN 1916

Eggs, 1,444 dozen.....	\$278.29
Sold 72 pounds broilers.....	11.38
Raised 70 pullets, valued at 75c.....	52.50
Four cocks kept for breeding.....	3.00
Total receipts.....	\$345.17
Expenditures—feed, supplies, etc.....	113.97
Net profit.....	\$231.20

When using the lamp brooder we had a
narrow escape from burning up a brooder
of chickens, so we decided to try the fireless
brooders. All went well until the chickens
were four or five weeks old, when there
came a very cold night with a piercing
wind. When I took the chickens out of the
brooder in the morning, many of them
were numb with cold. Several cold days
followed, and we lost a lot of them. We
didn't want any more fireless brooders.

In 1917 we had 193 hens and pullets to
start with. The hawks got several, and a
few died from sickness and accident. We
also sold a few of the older ones.

This year we got along nicely. We used
the lamp brooders again, and had no sick-
ness to speak of. We put up martins' nests,
so the hawks did not trouble much, and as
the chicken-house floor was cemented they
were safe at night. We raised 225 pullets.
Here are our results for the last two years:

RECEIPTS IN 1917

Eggs—2,006 dozen.....	\$571.22
Poultry sold.....	41.45
Raised 225 pullets, at \$1.....	225.00
Total receipts.....	\$837.67
Expenditures—feed, supplies, etc.....	428.81
Net profit.....	\$408.86

RECEIPTS IN 1918

Eggs—2,422½ dozen.....	\$744.51
Poultry.....	44.95
Raised 125 pullets.....	125.00
Total receipts.....	\$914.46
Expenditures—feed, supplies, etc.....	397.28
Net profit.....	\$517.18

We started in January 1, 1918, with 380
hens and pullets. We had as many hens as
I wanted, so did not try to raise any except
enough to replace the hens that would be
four years old in the spring. I set an incu-
bator and 20 hens at the same time, then
gave all the chickens to the hens. They
got along nicely, except when the roof
sprang a leak during a heavy rain, wetting
the chickens and causing them to pile up
in a corner, and over 40 were smothered.
We raised 125 pullets. We could see the
results of our trap-nesting, as this was the
best-looking lot of pullets we had ever had
—broad-shouldered and deep in the back.

WE AWOKE early on the morning of
August 5th to find our barn and most
of our outbuildings in a blaze. Besides our
buildings we lost three henhouses and 400
hens and pullets. We lost all but 25 of
our pullets, and only had 55 old hens left,
40 of them four and a half years old. I
kept an account of the hens after this, as
they had to shift for themselves and roost
in trees until November, when we got
another henhouse ready for them. I did
not take an inventory of the feed left on
hand at this time (luckily it did not burn),
but it was considerable, so we bought nothing
more during the year but one sack of
bran, and had \$25 worth of feed on hand
January 1st, after feeding 125 hens all that
time. (We bought enough pullets to bring
our flock up to that size immediately.) So
the expenses, by rights, should not be so
great as the list shows. We had fed our
young chickens much expensive feed, but
the price of eggs was so good all winter that
we feel sure we would have done well last
year had it not been for the fire.

During all this time we kept no account
of the chickens which supplied our own
table, but they are a very convenient kind
of meat, and we use a great many. Feed is
very high here, as it has to be shipped in,
while having to ship our eggs so far to
market takes much of the profit. In a
more favored locality one ought to make
more from chickens than we can here.

It seems to us that the main things to be
considered are to keep the young chicks
warm, clean, and active, and give them a
good balanced ration. To prevent disease
they must have clean quarters, and be kept
out of drafts. To make your hens lay well,
keep them free from pests and all annoy-
ances; they must be kept active and be
provided with a balanced ration. If these
requirements are met, and the hens are of
a good laying strain, they will give a good
account of themselves.

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How Illinois Farmers Got Fair Wool Prices

SAVING farmers of Illinois around \$350,000 on their wool sales was part of the work done by the Illinois Agricultural Association. Through co-operative pooling of the clip it was handled in such a manner that better prices were received, and the owners received the full values paid by the mills which purchased it.

Up to this year the wool business in Illinois was carried on in a loose manner. The owners sold wherever a buyer could be found. Local dealers were generally the buyers, and considerable speculation took place before the wool went to the mills. But this year the various state locals gathered the wool. In turn it was handed over to the state association.

The wool was not thrown on the open market according to the usual practice; instead, it was moved to Chicago and stored. The association placed a man in charge who watched the markets and demand. As the product was needed it was sold to the mills, thereby meeting a more urgent demand and making maximum prices possible.

The association figures the prices secured were about 10 cents per pound higher than if the individuals handled the wool as there has been generally a margin of about 10 cents per pound between the local buyer and the price paid by the millers.

Following is a list of wool sales made through the pool, showing the grades and prices received. The idea of grading the wool and selling it in its respective classes is claimed to have meant a substantial saving for the owners, because, in the past, producers knew little of grading and did not bother about the classification under which it sold.

The following figures were furnished by D. O. Thompson, secretary of the Illinois Agricultural Association:

Classification	Weight Pounds	Grease Price Per Pound
F. & F. M. Staple...	13,000	78c
F. & F. M. clothing...	36,000	59c
1/2 Blood clothing...	22,800	63c
Medium clothing...	28,800	61c
Burry and seedy, medium...	15,600	52c
Burry and seedy, low...	14,700	52c
Tags...	5,100	24c
Fine (dark)...	20,700	55c
1/2 Blood (dark)...	18,300	62c
3/8 Blood (dark)...	7,400	61c
1/4 Blood (dark)...	3,400	61c
1/2 Blood staple...	36,200	73c
3/8 Blood staple...	107,200	65c
1/4 Blood staple...	119,600	60c
Low 1/4...	21,400	52c
Cotts...	1,600	40c
Dead...	5,000	48c
Murrain dead...	125	30c
Damaged...	300	40c
Total...	477,225	

This is believed one of the most complete lists of actual wool sales made known in some time. It has been very hard to get information on wool prices because the general quotations, as a rule, do not state the various grades, but quote a range of prices. In the latter case the owner usually does not know under what grade his offerings come, and takes a chance on receiving the right price.

By pooling with the association, Illinois wool growers had the service of a man who understands grades, and he saw that each fleece was properly graded and sold. This brought the producer nearer the consumer, making a better price possible by eliminating the small local buyer. It is expected that this form of co-operative marketing will spread rapidly into many States.

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Boyhood on a Middle-West Farm

[CONTINUED FROM PAGE 70]

stronger hand. He shook his head and made frantic efforts to get rid of the cob, and I really felt relieved when he got the gag out of his bill. He didn't take up his hiss where he left off, but walked quietly away, seemingly a much subdued gander.

I do not think I was a very mischievous boy, but I had a sense of the comical. I had noticed that a rooster always crows when he flies up on the fence or up on anything. Now, a rooster does not seem able to stop his crow when he gets one started. Getting a clod or something to throw, I would watch, and when he commenced his crow by stretching up his neck I would let fly. The throw would generally catch him after his crow was well started, but which in his fright would trail off into a most comical and wobbly shriek. This was very amusing to me, and it was a little joke I was fond of playing on the rooster. Even to this day, old and white-headed as I am, I can hardly resist the temptation to look for something to throw whenever I see a rooster stretching up his neck.

Well, we are boys only once, 'tis said, but I guess some men are only boys grown up, with the boyishness only crowded to the background by more serious things.

One of the fields of this little Indiana farm on one side ended at a hill or bluff which dropped some thirty feet to a level with another field which was in meadow, and through which a small branch or creek ran. This meadow was in timothy, which grew rank, for the soil was rich. We did not pasture this meadow, but cut it for hay. There was no alfalfa in those days.

This side hill or bluff was too steep for cultivation, and was covered with a growth of brush, briars, and some weeds and grass. It was an awesome place to me, for as I explored along the edges with the courage of an African explorer, as I thought, my imagination pictured hurtful things that might make their dens in that tangle of brush and briars. I knew there were groundhogs there, for did not Father and his big white dog dig one out, much against his repeated whistled warnings?

THE groundhog, or woodchuck, or marmot, as he is variously called, is a sturdy little fellow of probably eight to twelve pounds weight. As a fighter he is a fair match for a dog of his size. He is of a grizzled dark gray color, and usually burrows in a side hill, convenient to a clover or hay field, where he sleeps through the winter, to come out on the second of February, so fairy tales tell us, to take a squint at the weather, and if he sees his shadow made by the shining sun he goes back and sleeps six weeks longer. So the second of February is Groundhog's Day. But how the groundhog knows the second of February is the right day to come out and view the weather, or knows when the right day has come, I can't tell you.

And then there were porcupines there, or somewhere about, for the old white dog came home one day with many of the barbed quills that are the porcupine's defense sticking in his head and nose. I remember what a howling time—on the part of the dog—Father had in pulling out with pincers these quills, for they are so barbed that they gradually work into any flesh in which they may be stuck, and must be pulled out. Some people say the porcupine can discharge his barbed arrows into you, but they don't know what they are talking about.

Up the branch from this meadow, and separated by a fence, was another meadow much larger, which we used as a pasture for the sheep, geese, and other stock. We liked to wade in this little creek and explore its pebbly bottom for crayfish, or crawfish, whose big claws, or pincers, we were afraid of, and for minnows and pretty stones.

At the edge of the water and in the clayey banks were many little wells of varying sizes, ringed around the edges at the top with rosettes of mud. While we often found crawfish under flat stones that we turned over, these holes or wells must have been their retreats.

I wonder if anybody knows how the crawfish dig their holes? It looks to me like they commence at the bottom and bore up. Perhaps they begin at the top with their scoop-shovel tails and dig down that way, as grasshoppers do.

— Did you ever see one of these crustaceous fellows, these cousins of the crab, bringing up his or her family? The 'possum has a pouch for her children, and the spider

[CONTINUED ON PAGE 78]

What would happen to the heavy winter markets if it were not for the packer?

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The result is, millions of animals are marketed.

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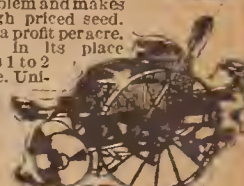
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Answer the farmers' big questions. How can I grow crops with less expense? How can I save in planting potatoes? How make high priced seed go farthest? The

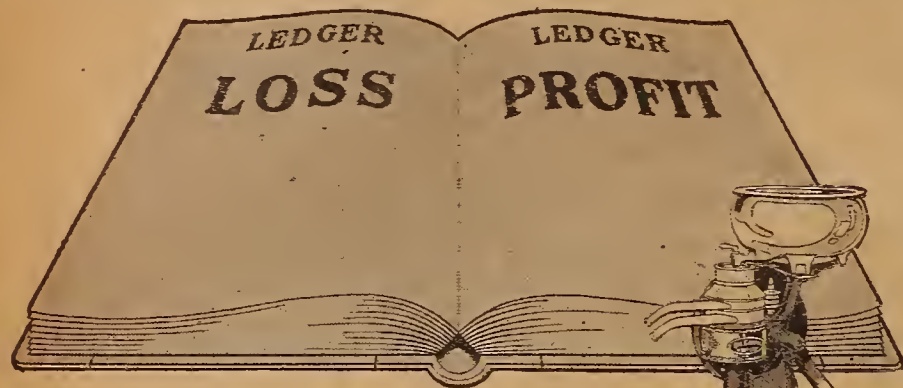
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De Laval users are on the profit side

No machine used on the farm returns a larger profit on the investment than a De Laval Cream Separator.

It saves from 25% to 50% of cream twice a day every day in the year over crocks and pans; and from 10% to 25% of cream over an inferior or half-worn-out separator.

With butter-fat at the present high prices these savings mount rapidly. Many thousands of users have found that their De Laval paid for themselves in a few months. De Laval users are always on the profit side of the ledger at the end of the year.

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Your local De Laval agent will be glad to demonstrate what an Improved De Laval will save you. If you don't know the nearest agent, please simply write the nearest office below

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Thousands in Use giving splendid satisfaction justifies investigating our wonderful offer: a brand new, well made, easy running, easily cleaned, perfect skimming separator only \$19.95. Skims warm or cold milk closely. Makes thick or thin cream. Different from picture, which illustrates our low priced, large capacity machines. Bowl is a sanitary marvel and embodies all our latest improvements. Our Absolute Guarantee Protects You. Besides wonderfully low prices and generous trial terms, our offer includes our—

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They Had the Right Idea

By Hilda Richmond

SOME weeks ago a friend of ours was telling how his neighborhood disposed of a no-account neighbor. Most of the farmers thereabouts owned their own farms and had them in a high state of cultivation, but there was one run-down eighty owned by an absent landlord that usually boasted a "poor white" family because no good farmer cared to till the barren acres. The buildings needed repairs, the fences were run down, the land needed draining, and altogether nobody but a farmer with little ambition or no credit would attempt to farm the lean acres.

Finally a tenant moved on the place whose very name suggested unpaid debts, trouble over stock, trouble in school, and general unpleasantness. The neighbors talked it over before he got there, and decided to try a new plan to dispose of the worthless farmer.

"Maybe it is common enough in other communities," said our friend, "but it was new to us, and it worked."

Well, the man moved through the rain and spring mud, and the season was backward besides. Getting settled put him late with his plowing, and when his progressive neighbors had their seed in the ground not a hill had been planted on his place. Without a word of warning, thirteen men with big strong teams descended upon his farm one morning at dawn and by night his entire corn crop was put in.

ACCORDING to our friend's story it would be hard to tell who got the most good out of the whole transaction. The man, used to having "every man's hand against him," was completely melted, while the neighbors wondered why they had never thought to be kind and helpful before.

Then they helped with the rickety fences and buildings, the owner gladly furnishing new materials when convinced that it was worth while, and loaned him a small amount of money to invest in some good

chickens and a few good pigs. The ladies did their part by encouraging the discouraged wife, and making her at home in their social and church activities, while the children had no difficulty in getting acquainted at school. In a word, they treated them exactly as they would any well-to-do neighbor who happened to be in a pinch with his work, and soon even the barren soil began to respond. The accumulation of manure was carted out, the weeds cut, and the trash that had once harbored colonies of rats was burned. In helping the worthless neighbor they also helped themselves to get rid of rats, weed seeds, and other pests.

NOW, don't imagine the man was transformed in a few weeks. He still has many of his old faults, but he is on the upgrade. He has better stock, better crops, and better soil on that once run-down place, and the owner has sense enough not to advance the rent so as to force him off. His wife and children are beginning to know what it means to live more than twelve months in the same place, and they are improved in health and spirits, while the man himself has ceased to whine about bad luck and no chance for a poor man, and is planning to buy a farm for himself.

But the best of it all, our friend says, is the help that came to the neighborhood in getting rid of a no-account neighbor. A kinder spirit, a better understanding, a sympathetic feeling for those down and out from whatever cause, a determination to be more considerate, and a real desire to be of service to humanity have taken possession of those prosperous men and women, and they have broadened their views along many lines.

As the man said, it may be a "common way to get rid of worthless people, but we felt it was uncommon enough to be worth repeating, as it may inspire others to go and do likewise."

Alarm Clock Sounds Reveille for Hens

By James Speed of Kentucky

THE country has been torn over daylight-saving laws, but as yet the hens have had nothing to say about working overtime by electric light. The newspapers have used sensational stories about increased egg production under the stimulation of electric light, but behind these stories there is a real foundation of facts.

The photo reproduced with this story was taken in a poultry house at the experiment station at Lexington, Kentucky. The big electric bulb can be seen glowing 100 candle power above hens that are busy scratching for food, in the deep litter on the floor. To the right, on a shelf, is the alarm clock connected electrically with the light. Three hours before daylight every morning last winter this alarm clock turned on the electric current, and the hens turned out to scratch and eat.

The result of three extra hours of eating and scratching has been most gratifying when measured by the egg basket. The 74 hens and pullets in the electrically lighted pen laid 461 more eggs in the four months beginning November 1, 1918, than did the same number of fowls which slept until daylight came each winter morning. These 461 sold at 70 cents a dozen, allowing a snug profit after the cost of the electric current and the additional food had been taken into consideration.

Cows which give their live weight in butter in a year are here.

Hogs at 200 pounds in six months after they are farrowed are everyday occurrences.

Hens laying eggs by electric lights when eggs are scarce is a paying proposition.

What will come next in increased production?



An electric-lighted henhouse that proved a paying proposition in Kentucky



Polled Hereford cattle on the farm of M. C. Hodgson, Ottawa, Illinois

How I Pick Cows That Win

By C. E. Richardson

SMITH, a neighbor up the road, happened to drop in one morning when I was testing milk. He was much interested in the process, and wanted to know all about it.

"That is a Babcock tester. I'm testing milk this morning," I told him. "You see," I explained, "by using this I can find out if my cows are paying for themselves."

"How is it done?"
"By means of this pipette I measure out a certain amount of each cow's milk. Then I put it into this milk-test bottle and put in with it a definite quantity of commercial sulphuric acid. This acid burns up everything except the fat, and then I put the bottles into the machine and whirl them for a few minutes. As the bottles are whirled they straighten out, and the butterfat, being lighter, goes up into the neck of the bottle."

"But how can you tell," he asked, "how much fat there is?"

"You see on each bottle"—I showed him one—"there are lines graduated or measured off, so that these lines measure the fat in the bottle."

"But after you find how much fat a cow gives, how do you know if she is paying for herself?"

"If the bottle shows that there is a certain per cent of fat in her milk, it will also show you just how much butter she makes for you in a year. The way to do is to weigh her milk for a certain period of time, and multiply that by the per cent of butterfat the Babcock test shows, and add one sixth for the overrun in making the butter."

"Could you tell for a week or a day?"

"Yes, indeed. Suppose a cow gave 30 pounds of milk a day, or 210 pounds each week. Four per cent of that would be 8.4

pounds, and one sixth of that added to it is 9.8 pounds, which means that a cow testing four per cent would give butterfat to make 9.8 pounds of butter each week."

"How much ought a cow to give in a year to be profitable?" he inquired.

"It is estimated by the best authorities that a cow should give at least 250 pounds of butterfat each year, and 6,000 pounds of milk."

"Then by weighing the milk every milking one can tell at the end of the year what a cow does?" he remarked. "But one cannot test every day."

"No, that is not necessary, though of course it would be better. If the milk is saved out for testing morning and night for one day, then tested once a month, and the average taken for the milking period of the cow, that ought to give a fairly accurate estimate."

"Did you ever find that any of your cows were better or worse than you supposed?" he wanted to know.

"Do you remember that cow that I bought of Williams? She was supposed to be a pure-blood, and could have been registered. I expected great results from her in the buttermaking line, as she came from a butter making breed. After keeping her for a year and testing her milk each month and weighing it each day, I figured all she gave me was 4,000 pounds of milk and 195 pounds of butterfat."

"Then there is old Brindle, a grade cow. I had an idea she wasn't good. But I thought I'd try her for a year and see. I was surprised. She produced over 6,500 pounds of milk and 350 pounds of butterfat. That was nothing wonderful, but it shows that one cannot guess. Every dairyman that has used a Babcock tester can tell you of similar surprises."

Is the Boll Weevil Licked?

(CONTINUED FROM PAGE 9)

and a slow worker, and a power duster for large plantations, scarcely practicable on less than 200 acres. The new machine will be suitable for growers with 50 to 200 acres of cotton.

Growers would do well to make their plans now for weevil control next season. Poison should be secured well in advance to avoid disappointment. And it should be bought on specifications, since some calcium arsenate is too low in arsenic con-

tent, or it may have so much soluble arsenic that it will injure the plants, or its mechanical condition may be such that it cannot be dusted.

The Department recommends these specifications: Not less than 40 per cent arsenic pentoxide; not more than .75 per cent water-soluble arsenic pentoxide; density not less than 80 nor more than 100 cubic inches per pound. Names of concerns making the poison and the machines can be obtained from the Delta Laboratory, and I would advise farmers to seek the advice of officials there before buying supplies and equipment. J. R.

Let's Go!

PUT one hundred men on an island where fish is a staple article of sustenance. Twenty-five of the men catch fish. Twenty-five others clean the fish. Twenty-five cook the fish. Twenty-five hunt fruit and vegetables. The entire company eats what thus is gathered and prepared.

So long as everybody works there is plenty. All hands are happy.

Ten of the allotted fish catchers stop catching fish.

Ten more dry and hide part of the fish they catch.

Five continue to catch fish, but work only part of the day at it.

Fewer fish go into the community kitchen.

But the same number of men insist upon having the same amount of fish to eat as they had before.

The fifty men who formerly cleaned and cooked the fish have less to do, owing to the undersupply of fish. But they continue to demand food.

Gradually greater burdens are laid upon the fruit and vegetable hunters. These insist upon a larger share of fish in return for their larger efforts in gathering fruit and vegetables. It is denied them, and soon twenty of the twenty-five quit gathering fruit and vegetables.

But the entire one hundred men continue to insist upon their right to eat.

The daily food supply gradually shrinks. The man with two fish demands three bananas in exchange for one of them. The man with two bananas refuses to part with one for fewer than three fish.

Finally the ten men remaining at work quit in disgust. Everybody continues to eat. The hidden fish are brought to light and consumed. Comes a day when there is no food of any kind. Everybody on the island blames everybody else.

What would seem to be the solution? Exactly! We thought you would guess it.

For we repeat that you can't eat; buy, sell, steal, give away, hoard, wear, use, play with, or gamble with *what isn't*.

—Editorial from "Chicago Herald and Examiner."



Dr. Hess Stock Tonic

A Spring Conditioner and Worm Expeller

Spring Is Here. Soon the litters of pigs will be coming, the calves, the lambs, and the colts will be dropped. Feed your brood sows Dr. Hess Stock Tonic before and after farrowing. It makes the bowels active, relieves constipation, promotes good health and good digestion which means healthy pigs and a mother with a milk supply to nourish.

Condition your cows for calving by feeding Dr. Hess Stock Tonic before freshing. Then feed it regularly to increase the flow of milk. It lengthens the milking period.

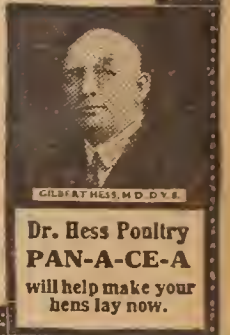
Give your broodmares a course of Dr. Hess Stock Tonic. And your work horses. It puts your team in fine fettle. You cannot afford to plow, harrow, sow, mow, reap or team with a team out of sorts, low in spirits, rough in hair, blood out of order, or full of worms. Dr. Hess Stock Tonic is good for sheep—especially good for ewes at lambing time.

Why Pay the Peddler Twice My Price?

You buy Dr. Hess Stock Tonic at an honest price from a responsible dealer in your town. Get 2 lbs. for each average hog, 5 lbs. for each horse, cow or steer, 1 lb. for every sheep. Feed as directed and see the good results. Guaranteed.



25-lb. Pail, \$2.25; 100-lb. Drum, \$7.50
Except in the far West, South and Canada
Smaller packages in proportion
DR. HESS & CLARK, Ashland, O.



Dr. Hess Poultry PAN-A-CE-A will help make your hens lay now.

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\$2300 Less than half cash; mile to creamery, 2 miles to town, stores, churches, etc. Large acreage dark loam tillage, big yields hay, general crops, spring-watered pasture, wood, extensive orchards, 9-room house, barn, granary, corn, poultry houses. Details page 21 Strout's Catalog Farm Bargains 23 States; copy free.

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Take Good Care of Your Live Stock

DO NOT let them suffer from neglect. Keep up their efficiency and value now, when so much is dependent on them.

Keep them free from the pain of strained tendons, the aches and tortures of swellings, lameness, bruises—with Sloan's Liniment. Its use for 38 years recommends it to you.

Apply Sloan's Liniment to the throbbing part and let it penetrate without rubbing. Prompt relief will follow, the pains and aches will subside, better work and better worth will be your reward.

Three sizes—the bigger the bottle the greater the thrift. Get yours today. 35c., 70c., \$1.40.

Sloan's Liniment
Keep it handy



More Work From Your Horses

YOU cannot expect horses to do a full day's work with shoulders galled, chafed and bruised. Such conditions run up heavy costs each day. Stop this useless waste of

horse power by fitting your horses with

Tapatco Stuffed Collar Pads

Stuffed Collar Pads are the best safeguard against injury to shoulders by the collar. They are better than unstuffed pads, which lack the soft, pliable and absorbent features of pads containing our specially prepared composite stuffing. They also make possible the use of worn collars that otherwise must be thrown away.

Low in Price—Long Lasting

Tapatco collar pads embody every desirable feature in pad construction and their constant use is real economy. They cost so little and do so much that no one should work a horse without them.

"Thirty-Eight Years in Making Pads"

We also manufacture a complete line of Riding Saddle Pads

FOR SALE BY DEALERS

**The American Pad
and Textile Co.**

Greenfield, Ohio

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NEW PATENTED HOOK ATTACHMENT

A strong wire staple reinforced by felt washer firmly grips hook to body of pad even though cover has been weakened by sweat and long usage. This lengthens life of pad. It is the greatest improvement since we invented the hook. Used on all our Hook Pads and only on pads made by us.



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For three years he has consistently been one of FARM AND FIRESIDE's most successful country representatives.

open to you. If you are interested, clip and mail the coupon to-day.

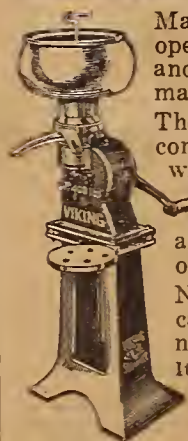
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No more back-breaking work
in turning your separator

VIKING REDUCES YOUR WORK TO PLEASURE



Many separators are hard to operate, regardless of the time and use or the tension of the machine.

The Viking separator, on the contrary, speeds up quickly without tiring the operator, owing to the smooth-running gears, shafting and correct height for operation.

No clumsy, heavy parts to cause unnecessary friction—nothing to get out of order.

It is easy to keep clean and sanitary. Viking has proven its worth.

Over One Million in Use
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SWEDISH SEPARATOR COMPANY

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It is EASY to BLAST stumps

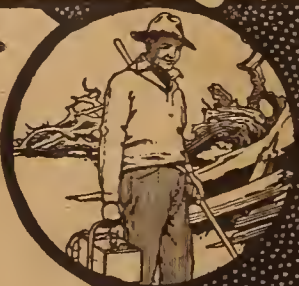
Atlas Farm Powder is prepared especially for the use of inexperienced farmers who wish to do their own blasting. It is as easy to use as the ordinary "gas" engine. Theodore Drake, Prattsburg, N. Y., writes regarding his first experience with it:

"After reading your book, 'Better Farming,' I am fully convinced of the value of explosives for farm work. I blew out some old apple tree stumps and smashed a rock with Atlas Farm Powder, though I had never shot any dynamite before."

You, too, will be able to use Atlas Farm Powder successfully after you read the directions in "Better Farming with Atlas Farm Powder." It tells how to remove stumps, blast ditches, smash boulders, plant trees and increase yields by subsoiling. Write for this book. It is free.

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Dealers everywhere Magazine near you

Atlas Farm Powder
THE SAFEST EXPLOSIVE
The Original Farm Powder



Boyhood on a Middle-West Farm

[CONTINUED FROM PAGE 75]

carries hers in a ball, but the crawfish tucks her family—and it is a numerous family, too—in the hollow of the under side of her broad, curved tail, and holds them there by drawing the tip of the tail forward and making a basket.

In the eddies along the banks, in places where the flags or cattails grew, we could find the slippery tadpole, the frog that was to be, which now had a tail, but whose nimble legs had not yet sprouted. Here, too, was the water skater, that light and airy insect with balls or shoes on his feet that enables him to skip and skim over the water seemingly without touching it.

The graceful and transparent "snake feeder," on gauzy wing, we could often see floating airily along, or perched so daintily on the pinnacle of a cattail. It was a "snake feeder" in boyish fairy lore only, for it never fed a snake in its life. Probably its right name was dragon fly, but it also had several other names. We thought it might be a "stinger," and never touched it, for it had an elongated body; and we always thought such insects had a stinger in the tail, as the wasps have. But it is harmless.

Farther up this meadow, and next the boundary fence, was a grove of beautiful sugar maples, from which every spring,

after the sweet sap had started up the tree, we made our sugar and molasses. Much has been written and sung of sugaring time, of romance and frolic connected with it; but, oh, the nasty weather that usually happens along about that time!

On one side of this meadow was the dwelling, and there was a gradual slope from the house to the branch two hundred yards away, and this was our coasting round in winter. Well muffled, what exhilaration it was to spend an hour or two at this winter sport!

Over beyond from the house, on the farther side of this big meadow, was some rough ground, a few acres in extent, covered with blackberries, which supplied us, and some of the neighbors as well, besides the birds, with all the fine berries we could use. But the briers! After a pailful of berries had been gathered, our clothing was frayed and our hands were bleeding.

This berry patch was a shelter for bunny cottontail and a resort for the birds—the jays, the catbirds, thrushes, blackbirds, flickers, redheads, and others.

Perhaps I ought not to dismiss the homely pumpkin with merely dropping the seed into the ground. The pumpkin was planted for a purpose. We always planted two kinds: One we called the "cow pumpkin," because we grew it to feed the cattle in fall and winter. It was a coarse-grained, yellowish kind. The other was a fine-grained, sweet pumpkin, usually somewhat flattened, and in color mottled and speckled, sometimes nearly a solid cream color. It was fine for pies and for butter. Pumpkin butter! I wonder if any farmer housewives make it now? I haven't seen it on the table, or heard of it, these many years.

Pumpkin-butter-making was an annual event at our house. I suppose the process was similar to making apple butter, and when made was of about the same consistency and color. Made with cider, as Father and Mother made it, it was but little inferior to apple butter. If it was likely to get little strong toward spring, fresh cider was added and it was reboiled.

Turnips were always a crop with Father.

The twenty-fifth of July,
Wet or dry,
Sow turnips.

was his motto. Although we used them much on the table, they were grown primarily for a fall and winter feed for the sheep. In feeding them to the sheep they were always sliced or cut into halves or cubes, no difference how small they might be. This is the proper way to feed them to any kind of stock. Fed whole, they are apt to choke the animal.

Father usually put in about three acres, sowing the seed broadcast by hand, as he did his grain, for there were no seeders in those days. The method of covering was by harrow. Sometimes a "brush harrow" was used. Several small trees were cut

and tied together at the cut ends, a team hitched on, and a good job of harrowing could be done. After the turnips were grown, they were pulled and piled—a back-breaking job—and then they were topped and stored for the winter's use.

Referring to the keeping of sheep, I need hardly say that most of our clothing in my boyhood days was homespun. It was no disgrace to be a wearer of jeans. Many of the best men of our land lived in a time of jeans clothing, and wore it. When the sheep were sheared, the wool was taken to the carding mill and made into rolls two or more feet long, and perhaps a quarter inch in diameter. These rolls were attached one end to the spindle of a spinning wheel. The wheel was about three feet, maybe more, in diameter, and made to revolve rapidly by the spinner, using a wooden "finger" to revolve the wheel. The wheel turned the spindle, and thus the roll of wool was twisted and reduced to the size of the ordinary yarns of to-day. The spinner would attach a roll to the spindle, give a rapid whirl to the wheel, and, walking backward, roll in hand, draw it out to the required size. This was repeated, walking backward and forward, backward and forward, hours at a stretch, until the job was done and the yarn ready for the weaver.

I think my mother spun enough yarn to have worn a path in the floor walking to and fro, if the spinning wheel had remained in one spot all the time. The hum of the wheel was a very familiar sound to our ears as we came in from our work in the fields.

Then there was a smaller wheel used in the spinning of flax, at which the operator could sit down and run it with the foot by treadle.

"She layeth her hands to the spindle, and her hands hold the distaff."—Scripture.

Of this 80-acre farm of Father's about two thirds was in cultivation and meadow, the balance in timber. A few years before we left there, Father commenced the clearing out of ten or twelve acres of the wooded part. The clearing of a patch of timber and brush and bringing the ground under cultivation is no light job, I can tell you. It is the hardest kind of work. And when the ground is ready for the plow, there are the stumps and roots to bother cultivation and the harvesting of crops. It is hard on a team, on implements, and on the man who holds the plow handles.

I was big and old enough now to help in cutting and piling brush, but rather in the way in piling up the logs, for that was a job for men or for a man and team. After the brush and logs had been in piles long enough to be somewhat dried out they were burned. This was the interesting and spectacular part of it, for the burning was usually done at night.

I think it was the winter of my last year of schooling in Indiana that the singing geographic school teacher came around. The method of teaching geography was not quite flexible enough to apply to all parts of the globe. I remember it best as applied to our own country, and to a knowledge of our States and their capitals. The name of a State with its capital would be sung out, and if the town was on a river, or there was something else to distinguish it, that also would be added to the refrain.

The State and its capital would be sung twice, and the second time the river would be added. As no two States and their capitals were alike, with the same number of syllables, it was like singing a short-meter tune to a long-meter verse, and vice versa; in fact, there was no tune to it, but a mere singsong. It was as melodious as the clacking of geese or the rasping of guineas. For instance:

The State of Maine, Augusta,
The State of Maine, Augusta,
On the Kennebec River

Kentucky, Frankfort,
Kentucky, Frankfort,
On the Kentucky River.

Of course, this system of teaching geography soon wore out.

Our trading town was Peru, the county seat. A much-traveled thoroughfare led



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The most wonderful opportunity in the world for Business Farmers is in the "SELECTED" Farms, which can be bought for \$15 to \$40 an acre along the lines of the Canadian National Railways in Western Canada.

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These "SELECTED" Farms are carefully chosen from the cream of the richest wheat and cattle country in America, to meet your special needs, the experts representing 14,000 miles of railway, whose advice, while free to settlers, is of great practical value.

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Western Canada extends a helpful hand to homeseekers. Friendly neighbors—splendid schools, churches and social life—warm, sunny, growing summers and dry, cold, healthy winters—await you in this wonderfully prosperous "LAST WEST."

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"SELECTED" Farms average more than 20 bushels of wheat per acre. Under specially favorable conditions a field of 50 to 60 bushels per acre is not uncommon. Dairying is exceptionally profitable. That soil and climate are well adapted to it is shown in greatly increased production and high quality maintained. A world-wide market awaits all that Western Canada can produce. Beef and dairy cattle yield great profits. Stock thrive on the prairie grasses, which in many sections cure standing and make fine hay. Cattle and horses require only natural shelter most of the winter and bring high prices without grain feeding.

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by the farm to the town. This was the Strawtown Road, and on the way crossed a swampy piece of ground about a mile in width. It was bridged with split logs laid on the surface flat side down, the round upper side making a very bumpety-bump roadway for a springless wagon to cross over on. It was called the corduroy road. Imagine a very much exaggerated wash-board for a roadway! What a fine chance to make a splendid wheelway by bolting wide, heavy planking on each side. We always dreaded this piece of road, for to ride over it in our springless farm wagon was a punishment, and except in a prolonged dry spell there was no way to avoid it.

Well, I will stop here for this time, but if you are interested in this old-fashioned story, there will be more of it in these pages next month.

[TO BE CONTINUED]

What the Road Past Your Farm Means

[CONTINUED FROM PAGE 19]

in Colorado, who said that similar conditions had existed all summer in their districts.

Before writing a word of this article, I discussed the various phases of this subject with over twenty people, ranging from MacDonald, director of public roads in the national capital, to a lone cowpuncher whom I found whiling away his Sunday trout-fishing in the Shoshone National Forest of Wyoming. Some of those I talked with were sincere in their belief that all the joys, happiness, and blessings that humanity is heir to can be traced directly to the good-roads movement. Then there were the other extremists who painted a dark picture of three horrible goblins—graft, debt, and taxation, trampling the interest of the "common pee-pul" in the dust. Somewhere between the two extremes, of course, one can get a true perspective of the value of improved roads.

"How We Made Over Our House"

[CONTINUED FROM PAGE 26]

the well, insuring fresh water at all times, the water coming at the turn of the faucet.

THE COST	
The entire labor bill for carpenter and mason work and common labor was.....	\$1,215.20
Lumber bill, including doors, sash, glazing, wall board, hardware, grate, mantel, and buffet.....	2,060.00
Plumbing and fixtures, electric-light plant, and compressed-water system.....	1,050.00
Furnace.....	421.00
Cement.....	75.00
Gravel.....	25.00
Wiring and electric light fixtures.....	175.00
Paint and painting, estimated, as same is not yet completed.....	200.00
Total.....	\$5,221.20

The Packers

[CONTINUED FROM PAGE 44]

manipulation to fleece the farmer in summer and the consumer in winter. Packers make the profit on cheese, not the wholesaler or retail grocer. When the farmer has the most cheese to sell the price is lowest."

But the farmer's questions and his ideas of reform in all these matters are sane and constructive. He is not trying to ruin or undo anyone. He never suffered from a nightmare of social and economic cataclysms. He knows that his business and property depend on the existence and effective management of stockyards, packing houses, cold-storage warehouses, refrigerator cars, and other machinery of distribution. The farmer does not want these institutions destroyed or put under inefficient or inexperienced management. He merely wants to have cold-storage warehouses and the other necessary machinery of food distribution so operated as to encourage him to keep on producing the stuff to fill the cold-storage plants and ultimately the stomachs of the nation.

The farmer never proposes to kill the goose of golden-egg fame simply because she looks too fat and prosperous. He merely says: "That goose is getting too much. We shall have to divide the rations so that the rest of them will have a chance."

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Maybe a Water Heater Would Pay You

THAT combination water fountain and heater is the most convenient and profitable hog equipment I ever bought." The speaker was J. L. Kraning, one of the good hog raisers in Miami County, Indiana. "You remember that cold day we had in January two years ago? Those two oil lamps kept the water so warm that only a thin coat of ice formed around the edges. Most of the time one lamp is all that's needed to keep the water warm enough for the pigs to drink comfortably."

Mr. Kraning used to water his pigs in a trough during the cold winter days. "An hour after I'd chopped the ice out of the trough and put fresh water from the well in, it would be frozen up, most likely," he went on. "If any of the pigs did not drink soon after I'd put in the fresh water, they

usually had to wait another twelve hours before they could get a drink. That's business for a growing pig. He needs plenty of warm water in the winter to help digest his feed and keep his digestive system flushed out properly. With this water heater my pigs can get a drink any time they want it—a drink that does not chill them and make them hump up their backs like my pigs did when they had to drink ice-cold water from a trough."

The heater and fountain that Mr. Kraning uses is a combination affair. There are two oil lamps to warm the water. Kerosene is used for fuel. The heater is mounted on iron skids and can be hauled around easily with a horse.

It is likely that your local hardware dealer sells such heaters.

JAMES R. WILEY, Indiana.

How Udder Type Affects Production

By H. R. Schultz of Iowa

WHY the importance of the udder? If you know dairy cattle, you know that upon the size, shape, and general characteristics of this organ and its accessories depend pretty largely the producing capacity of a cow.

Size is essential, yet often misleading. The dairyman must keep in mind that a large udder may be due to either an extensive growth of secretory tissue or of connective material. In the latter case the abundance of connective tissue often misleads the inexperienced buyer into purchasing what he supposes, on account of the large display of udder, to be a high producer, but which may be a really inferior animal.

A desirable udder, one composed largely of secretory tissue, should be mellow to the feel, covered with a soft, pliable skin and fine hair. On the other hand, an udder that feels firm and coarse, and which does not decrease noticeably in size when the milk is drawn, is undesirable, and is characteristic of the "boarder" cow. The importance of udder texture cannot be over-emphasized, yet, strange as it may seem, the meaty-uddered cow often wins in the show ring. This is due to the fact that the udder of a high-producing animal is liable not to contain sufficient connective tissue to maintain it in a desirable shape under the heavy weight of milk secreted.

LENGTH and width is to be preferred rather than great depth. Aside from the possibility of a deep udder breaking down under heavy strain, is the objection that it offers too little surface for the operation of the blood vessels from which materials for the manufacture of milk are secured. The udder of the animal in the photograph carries well forward, and is attached high in the rear. Note, too, the prominence of the blood vessels.

While not always an indication of

high production, the cases in which prominent veins cannot be associated with abundant milk secretion are few. After covering the udder the milk veins pass forward along the stomach and disappear in the milk wells. The deeper the milk wells, and the longer and more tortuous the milk veins, the better the indications that the cow is a good producer.

THE teats should be reasonably large, three to four inches being preferred by most dairymen. Abnormally large teats, however, are apt to be associated with "cut-up" udder—that is, one the floor of which is irregular and cut up between the teats. Any such irregularity or lack of fullness means less room for secretory tissue, and hence is objectionable.

While most authorities prefer that the floor of the udder be flat, it is nevertheless a fact that an udder sloping upward in the fore part, such as the one shown in the illustration, or more usually so, may usually be expected to contain more secretory tissue than a flat-bottomed one.

The desirable characteristics mentioned thus far may be determined easily only after a cow freshens.

In case the animal is dry, a reliable indication of a good-sized udder, in so far as length is concerned, is good length between the point of the hip bone and the pin bone. A line dropped from the pin bone will meet the rear attachment. The conformation of the thighs, too, is a reliable guide to the breadth an udder may be expected to develop. The thigh should be concave, thus allowing plenty of room for development. A beefy thigh should be guarded against. It is a sure sign of poor udder conformation.

Size, shape, and texture of the cow's udder are three things with which a breeder of dairy cattle must be familiar, for upon them, to a great extent, depends the value of dairy animals.



Cows of this type rarely fail to pay their board, and a handsome profit also

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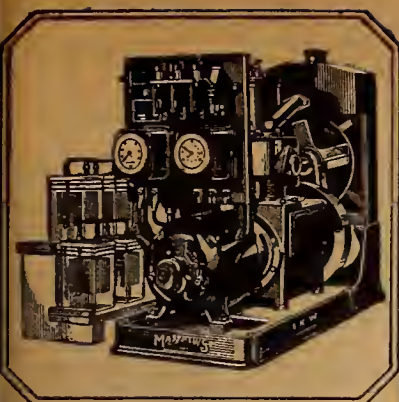
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Dept. R. A-83 CHICAGO

The Part That Curiosity Has Played

(CONTINUED FROM PAGE 14)

to town. I remember that just as soon as he showed up people would gather around the wagon, and the honey would be taken in no time. I do not know what he got for it, but probably the price of butter—eight or ten cents a pound. Well, on his return he stopped at a blacksmith shop. The smith came out and said:

"Well, brother Root, I suppose you have brought me that honey you promised."

My father replied:

"Why, did I promise you some honey? I declare, I forgot all about it. It was all sold before I got fairly into town."

At this the blacksmith took a big jack-knife out of his pocket (the biggest I had ever seen), pried off the top of one of the drawers, scraped up the honey, and as he smacked his lips he said:

"You will certainly have some more honey that you can bring me, won't you?"

Father told him there would be no more that season. The blacksmith was very disappointed and I felt sorry for him.

I think my father gave up keeping bees. He said they stung people, and since the forests had been cut down largely the bees did not get much honey, anyway. He objected to my having any bees on the premises, but I said that when I had a home of my own I was going to have some bees. But in my busy life other things crowded the bees out until by chance a swarm of bees passed overhead one bright morning. One of the boys who were helping me said, "There goes a swarm."

I replied:

"Oh! I want some bees, and I have wanted some all my life."

My partner in business, whose father was quite a beekeeper, replied:

"All right, Mr. Root. Give me a dollar and you shall have the bees that are just going over that orchard."

This aroused my curiosity, and having a silver dollar in my pocket I handed to him as a sort of joke, little dreaming that he would be able to get them. About half an hour later he came back with a wooden box which he tipped up so I could see the swarm, and said:

"Here are your bees."

I stared at him a moment in astonishment, and then at the bees as I replied:

"Mr. Shaw, how in the world did you get those bees down into this box?"

He replied laughingly:

"Oh! that is a ten-dollar secret."

I do not think he vouchsafed to tell me anything more, but from that minute I began to neglect my regular business in order that I might follow up this wonderfully fascinating industry of bee culture.

I was carrying on a jewelry store at that time; but my sister, who was clerking for me, said it was cruel the way I questioned the old farmers and everybody else who had kept bees or knew anything about them.

I SOON made a trip to Cleveland, 30 miles away, just to overhaul the book-stores and see what I could find on the subject of bee culture. It was lucky indeed that I settled down on "Langstroth on the Honeybee." Soon afterward I got hold of Quinby's Mysteries of Beekeeping. Then I sent across the ocean for Huber's work on bees; but it was printed in German. That did not hinder me long, however, for I found a German schoolma'am who was willing to translate it for me. When we got part way through the book she looked up and said:

"Mr. Root, here is something that sounds like a 'bee cradle.' Do you know of any such thing in the hive as a cradle?"

At first I could not catch on, but pretty soon I said:

"Oh, you mean a queen cell."

She replied:

"Yes, I guess that is it—the cradle where the queen of the hive is reared."

I soon got into correspondence with Langstroth, and later with Moses Quinby, and then later I had copies of all the bee journals that had ever been published in this and foreign countries; and when the world had nothing more to tell me I had some bees in a glass conservatory at my bedroom window, and I got my information from them direct.

Now if there is any moral to this story, dear friends, it is that when you start out in any line of work make yourself master of what the world has already done. It is an easy matter now, with our modern libraries, compared with what it was sixty years ago, when I first commenced and made my place the "Home of the Honeybees."



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More than a year has passed since the signing of the Armistice, yet all the world still feels the effects of the War. The Telephone Company is no exception.

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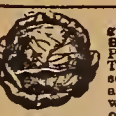
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Stokes Seeds—1920

It is an unusual agricultural catalog, frankly telling of both the good and inferior qualities of vegetables and flowers—also many other things of interest to the country dweller.

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Windermoor Farm
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Is our "JOHN BAER." Worth 25c per packet. To introduce our HARDY NORTHERN GROWN SEEDS, we will send packet of the above and one each of the following, for 10c: "1200 to 1" Beans, Beet, Carrot, Cucumber, Lettuce, Onion, Parsnip, Radish and superb Asters. Due bill for 10c with each order. Money back if not satisfied. Catalog of Seed Bargains FREE. SEND TODAY.

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For 71 years the leading authority on Vegetable, Flower and Farm Seeds, Plants and Bulbs. Better than ever. Send for free copy today. 1920
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Thus assure yourself of the biggest yields—the best your garden can grow. Use the Isbell Catalog as your guide. It shows varieties almost unlimited of the finest vegetables, many prize winners of international reputation—all produced from NORTHERN GROWN

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Plant only the best, hardiest, earliest maturing seeds. 41 years growing seeds in Michigan—ceaseless experimenting, careful selection, and perfect cleaning have made more than 200,000 satisfied Isbell customers. You buy direct from the grower and save money. Satisfaction guaranteed.

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S. M. Isbell & Company
269 Mechanic St., Jackson, Mich.



How One Pig Earned \$1,000

By S. R. Winters of District of Columbia

TO OBTAIN a loan of \$25 from a bank, invest it in a product imported from a distant State, and realize a net profit of \$1,055.85 within fifteen months, suggests an achievement in high finance.

To Elton Sartor, a fifteen-year-old boy in Bartlett, Williamson County, Texas, the transaction simply represented an investment of \$25 in a 68-pound Poland-China gilt, picked from choice breeding stock in Kansas. The negotiation was simple enough. The result achieved bulks big. The adventure not only gives the Texas youth a bank balance of over \$1,000, but Elton Sartor also has been awarded the unchallenged title as the 1918 pig-club champion of the United States. He likewise has been awarded a scholarship to the Texas Agricultural and Mechanical College.

The hyphen between the banker and farmer in Texas, the prestige of a pig-club organization of nation-wide identity, and the helpful co-operation of a county agricultural agent were among the agencies that stimulated the boy pig grower.

"Whole milk will certainly make the pig's tail curl" is a phrase that Elton Sartor does not discount in practice when producing championship pork. He has unmovable faith in milk as an item in the pig's diet. And he talks enthusiastically about a balanced ration. Well-directed effort and intelligence characterized the activities of young Sartor in lifting a 68-pound sow pig from a \$25 valuation to an enterprise appraised in four figures.

THE record herewith in its unvarnished form speaks for itself: The first litter from this sow was 11 pigs. The price he got for them when they were six months and four days old, and weighed 2,233 pounds, was \$527.85. For 9 pigs out of the second litter of 12 he received \$225. Adding \$500, the amount refused for the sow, and deducting the feed bill of \$172, the gain was \$1,055.85. This means a net profit of \$1,055.85 in fifteen months on an initial \$25 investment.

Remarkably significant is the record of the two pig-club champions claiming Texas as their home, for two successive years. For it was down in Georgetown, Texas, that Shelby Mullins developed into championship proportions in 1917—and both Mullins and Sartor found identical guidance in the same county agricultural agent, Owen W. Sherrill.

Sandwiched between the wealthiest

counties of Texas—Williamson and Bartlett, with a population of 1,815, all told. It is the home of Bartlett Boys' Registered Pig Club, Elton Sartor, as well as the source of strength of the banker-farmer movement that groups itself around sixteen banks in financing the pig-club members.

"I am safe in saying that no deserving boy has yet been refused assistance in buying his pig or brood sow where he is willing to follow the suggestions of county agent," says one banker.

T. B. Benson, cashier of the Bartlett National Bank, states: "Any boy who raises hogs and take an interest in this bank. I have not lost a cent on notes, and do not expect to."

Loans are made the pig-club boys at eight per cent interest, the only element or lien required being the promise to pay and the loan's security by the boy's father.

Some of the other outstanding achievements as contained in reports of Sherrill, county agricultural agent, that one member cleared a profit of \$1,400; four made a net profit of \$500 each; over \$250 each; and eleven, over \$100 apiece—from one sow pig each in 1917.

Pure-Bred Poultry Pay

WHEN eliminating the scrub, remember that a pure-bred rooster is too. Valuable light on this subject from the North Carolina Experiment Station, which worked out an interest when you use a pure-bred rooster with an ordinary flock of hens. Flock one composed of common hens; flock two was produced by breeding these common hens to mon males; flock three was produced by breeding flock one to a rooster from a producing hen. The following year flock one laid 89 eggs per hen; flock two laid 136 eggs per hen, while flock three laid an average of 136 eggs per hen. This increase of 47 per cent tells very eloquently how a high-grade sire paid. But these figures alone, do not tell the whole story, and big proportion of the increase with three came at a season—May and June when the production of flocks one and two was relatively very low and prices correspondingly high. The same thing work in your flock, if you are not using a pure-bred male.

The Camels Are Coming

WE WERE walking down Broadway, in New York, the other night, just as the theater crowds were coming out, when we heard a passerby exclaim:

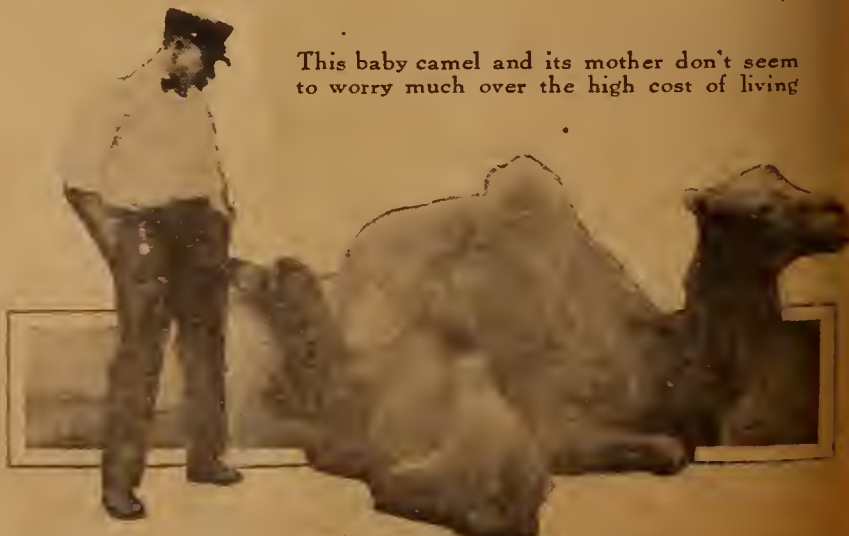
"Great guns! I thought this town was dry. Am I drunk or are the animals real?"

Turning around we saw what he meant. Three shaggy-haired camels with one man as escort, were lumbering along the crowded street, their cushioned feet gripping the icy pavement. They were apparently unaware of the passing stream of automobiles, the honking horns, and the shrill whistles of the traffic squad. Crowds of people everywhere stopped to look, and, indeed, it did seem strange to see these beasts of the desert on the "Great White Way." On inquiry, we learned that they were from "Aphrodite," the big spectacular production of ancient Egypt, which was playing at the Century Theatre. We wonder if stage camels learn to love the bright lights as much as stage dogs; or do they pine for the sandy wastes and oases of their home country.

The camels in the picture are a contented family in the Zoo at Cincinnati.

A. S. W.

This baby camel and its mother don't seem to worry much over the high cost of living





Here are the two piles of ordinary sand as they looked at the beginning of the experiment

Bacteria Work Wonders in Making Soil Fertile

"SEEING is believing," says the old axiom, but unless we take a microscope into the fields with us millions of tiny friends of the farmer go about their work unseen.

Legumes are grown in a crop rotation because larger crops are harvested in the years that follow. Sometimes the clover, alfalfa, peas, soy beans, vetch, or other legume fails to prosper. Very often it is the absence of the friendly bacteria that makes the difference. Inoculate the legume and it will thrive.

The scientists at the Wisconsin Experiment Station made four piles of sand prove the difference bacteria make in growing legume crops. They placed equal parts of sand in four jars. Two of

the jars were set aside to show the condition of the sand at the beginning of the trial. In the other two jars legumes were planted. Bacteria were added to one jar and omitted from the other. After four crops had been grown the sand was emptied out of the jars. The sand in which uninoculated legumes had struggled to grow could hardly be distinguished from the sand in which no crop had been planted. The sand in which the bacteria had been helping the legumes had changed to a dark color, because it was filled with humus or organic matter and was real black dirt.

Bacteria and legumes are the best friends the farmer has. Are any working for you? W. A. SUMNER, Wisconsin.



And this is the way the same two piles of sand looked after growing four crops of legumes. The dark pile was inoculated, and is well on the way to becoming real soil. The light-colored pile shows clearly the difference in effect of an uninoculated and an inoculated legume

What My Wife Has Done to Help Me Succeed on the Farm

Fifth Prize

Winner: S. S. Stokes
Swannanoa, North Carolina

SIX years ago I married a school teacher. I was then a careless, easy-going boy. I brought my wife to my father's farm, a 37-acre farm in western North Carolina. The soil was fair but rocky, and the renters to whom my father had rented it, in order to work for the neighbors around, had not benefited it any. We had never really made a living from it. There was no horse nor any tools on the place.

My wife worked for a neighbor the first summer, and for a large school near-by the first winter, as we needed the money, and all my time was needed on the farm. We bought a mule on time, and soon paid for her with my wife's help. The next spring my wife traded her young heifer for a cow, bought two pigs, a second-hand buggy, and some turkey eggs. She planned and put in a splendid garden, and began to peddle her own produce.

Our farm lies between two large towns and near a small one, all within ten miles.

All this time she was helping me in planning and in studying crop rotation, and during this period we made some good friendships. She says one never knows when one needs a friend, and it must be true, for she has built up a splendid trade, and people take her word for a thing before they will mine.

She sells crochet and fancy work, garden produce, milk, butter, eggs, chickens, turkeys, canned stuffs, preserves, and pickles. and every year has a calf and hog to sell. What she doesn't sell herself she lets out on commission to some women customers, and

never once have any of them acted dishonorably with her.

She keeps my accounts as well as hers, and does all her own work, often finding time to help me in the field. To-day, after six years of hard work and planning together, we have a good, new barn, outhouses, a new bungalow, two good mules, wagon, new buggy, tools of all kinds, cows, hogs, chickens, and turkeys. We have a bank account, and owe less than \$20. I am studying agriculture at night. My father takes FARM AND FIRESIDE, which we study and talk over together. In spite of all her work, my wife still has time to ride horseback and swim with me.

How she does all that she does, I can't tell; but she often says that if more women would plan more, and grumble and gossip less, there would be more successful men, and verily I believe it.

Neither of us are thirty, but all I have and hope to be I owe to my wife.

Eighth Prize

Winner: Lewis Dieffenbach
Dushore, Pennsylvania

WELL, it began about ten years ago, but I never took time to think how much my success depended on her. To begin with, we were both rather young, and we thought that the farmer was the only one that had any work to do, so we decided we would go to find Easy Street.

One morning I took the train for the nearest city, where I applied and received a position, rented two furnished rooms, then went back and got the young lady, and we went to the next State and were

[CONTINUED ON PAGE 86]

Last Big Block of the Canadian Pacific Reserved Farm Lands

THIS announces the offering of the last big block of the Canadian Pacific Reserved Farm Lands. Until this block is disposed of you can secure at low cost a farm home in Western Canada that will make you rich and independent. The country is ideal for mixed farming as well as grain growing. Later, the same lands can be bought only from private owners—and naturally, prices will be higher. Never again on the North American Continent will farm lands be offered at prices so low.

Your Last Big Opportunity

This block contains both fertile open prairie and rich park lands in the Lloydminster and Battleford Districts of Central Alberta and Saskatchewan. You can buy farm lands on the rich prairies of Manitoba, Saskatchewan and Alberta for \$11 to \$30 an acre. Or land in Southern Alberta under an irrigation system of unfailing water from \$50 an acre and up.



No Taxes on Improvements

There is a small tax on the land—seldom more than 20c an acre for all purposes, but there are no taxes on your live stock, buildings, improvements, implements or personal effects. Good markets, modern schools, roads, churches, amusements, make farm life desirable and attractive. Here you can achieve independence.

No Sale Without Investigation

The Canadian Pacific will not sell you a farm until you have inspected it. You must be satisfied—and every question answered before taking up your home. Investigation is invited and made easy. Don't delay your investigation. This announcement calls attention to the last great block of Canadian Pacific Reserved Farm Lands.

Twenty Years to Earn and to Pay

The Canadian Pacific offers you this land under a plan of long term, easy payments that is remarkable in the history of farm investments. You pay down 10%. Then you have no payment on the principal until the end of the fourth year, then fifteen annual payments. Interest is 6%. In central Saskatchewan, Scager Wheeler grew the world's prize wheat. World's prize oats were grown at Lloydminster.

Lands Under Irrigation

In Southern Alberta, the Canadian Pacific Railway has developed the largest individual irrigation undertaking on the American Continent. This district contains some of the best lands in Canada. An unfailing supply of water is administered under the Canadian Government. Prices range from \$50 an acre up on the same easy payment terms.

M. E. THORNTON
Supt. of Colonization

Canadian Pacific Railway
943 First Street, E., Calgary, Alberta

For all information about Canada, ask the C. P. R.

EATON—THE STRAWBERRY SUPREME

Will produce more quarts to the acre of super-quality berries than any variety known. Catalog sent free describing this and all standard varieties; also Small Fruits in assortment. Write for it now.

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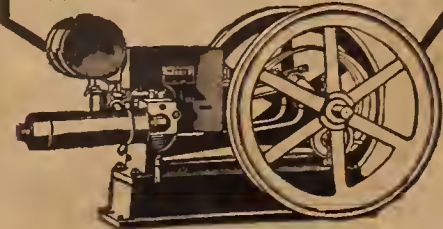
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in small or large lots at half agents' prices. Catalog and Green's Fruit Book—FREE. Green's Nursery Co., 19 Wall St., Rochester, N. Y.

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Kellogg's Everbearing Strawberry Garden will reduce the H.C.L. in your home and give you a great many dollars cash profit besides. This book pictures in colors and fully describes Kellogg Strawberry Gardens, also the world's latest and most wonderful strawberries, — Kellogg's Big Four and Big Late, Kellogg's New-Race and Kellogg's Everbearers. We want you to have this valuable book. It won't cost you a single penny — we even pay the postage. Send us your name and address (written plainly) and we'll mail you a copy at once FREE AND POSTPAID. Write today.

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Here's a Germ Worth Cultivating

By W. S. Andrews

ONE THOUSAND DOLLARS reward is offered for the cultivation and preservation of the new germ which has been found to be developing in this community."

This is not a bacteria for the prevention of influenza or for the cure of dandruff. It is the germ of civic pride and improvement, which is being developed by the enterprising citizens of Mechanicsburg, Ohio. This village is not an unkempt factory or mining town. It is a prosperous farming community with well-kept lawns and maple-shaded streets. But in order to make it more beautiful and a more attractive place in which to live the business men and clubs are offering \$1,000 in cups and cash prizes, in a three-year "Home Garden Contest."

For a number of years a children's garden contest has been very successfully held in connection with the public schools. Prizes have been offered by grades for both flower and vegetable gardens, and a final show is held at the school building which attracts much attention. All the work must be done by the boy or girl who enters the competition, and the College of Agriculture sends over a competent judge so that everyone gets a square deal. Field-seed plots have been used some years, and some interesting results have been obtained where boys used smut-treated oats alongside fields of their fathers' which were badly infected. Needless to say, the fathers didn't have to be shown but once. Alfalfa, soy beans, and different legumes and cereals are grown by the boys, and make a very interesting study.

SO THE grown-ups decided that they wanted a contest too, and theirs, of course, is on a much larger scale. Fourteen prizes will be given each year, for three years, for the best planned and cared for garden and lawn, the first prize being a handsome silver cup and \$35 cash. This cup becomes the permanent property of the person who wins it two years out of three. Everyone has an equal chance at the money, whether he has only a small cottage with a miniature lawn or boasts a large, modern home with acres on which to plant. The man who makes the most of his opportunities is the one who will carry off the cup. Consideration will be made for those who have a yard too small for trees, and for those whose plantings will be entirely new.

The planning and judging is under the expert supervision of the Landscape Gardening Department of the Ohio State

University, Prof. Alfred Hottes being the guiding genius of the plan. Professor Hottes is a Cornell graduate, and an enthusiastic disciple of the art created with flowers, trees, and shrubs. The grounds of all contestants are to be gone over three times each year, and all have equal access to his skilled suggestions in planning their landscape effects.

Scale of points which will be used in judging is as follows:

1. Landscape principles	20
2. Neatness and labor	15
3. Health and vigor	10
4. Variety of plants	10
5. Color combination	5
6. Permanency of planting	10
7. Condition of lawn	10
8. Condition of house	10
9. Condition or lack of trees	10
Total points!	100

Some difficulties, of course, were met in planning the gardens. On spying a large bed in the middle of one lawn Professor Hottes inquired what it was used for. He was told by the owner that a large banana tree was planted there every summer, it being kept in a greenhouse all winter. On explaining that such exotic plants should not be used in this climate, if the best effects are to be obtained, the dismayed owner anxiously inquired what she should do with her pet.

"You see the barn back there?" the Professor replied. "Behind that barn would be the finest place in the world for it."

At another place, which was on the whole very well planted, and which contained a very fine collection of perennials, criticism was made of a rambler rose, it being considered out of place. Several other locations were considered, but finally the owner was convinced that it had better be left out altogether.

A fine spirit of co-operation is thus shown between the contestants and those who are helping them get started right. One woman remarked enthusiastically that if the professor told her to move a shrub she would move it that very day. Nearly a hundred people have entered the contest, and more will enter next year. In three years the plantings will begin to show real results, and the community homes will blossom forth in all their new-found beauty. The country folk are taking an interest too, and a goodly number of the contestants are farmers or farmers' wives.

I wonder if there aren't a lot of communities that could use this method to get some beautifying done. How about some more centers for "germ culture"?

Here's Ready Money

"I MAKE a lot of ready money out of that little nursery," said a friend the other day. "I find more sales for my trees and vines each season than I can supply."

I stood looking over a small plot of ground on which various small peach, apple, and plum trees were growing, along with a number of grape and ornamental vines and berry bushes. This man has knocked around the country at carpentering and various other trades, and only lately has he ventured into the nursery business. He is a painstaking fellow, and this fits him admirably for the delicate business of grafting and propagating the various small cuttings with which he works.

"I have some of the best wild mulberry cuttings over here that I ever saw," he continued. "The parent tree used to stand out there in a neighboring field, but last summer the owner permitted it to be cut down. It always bore a good crop of nice, big berries. I have picked many of them that measured an inch and a half in length and were juicy and sweet as sugar. Some sprouts came up around the stump after the tree was cut, and I have them nicely rooted and in good growing order."

"But will mulberry cuttings grow if you

stick them down anywhere?" I asked him.

"No; I stuck them down in the hotbeds first, and kept them well watered for a time. They didn't all grow, of course, but these finally took root in the rich sandy loam, in the beds. I had some cuttings from fine rosebushes and ornamental shrubs in there at the same time, and most of them lived. I do a lot of pruning for people around here every year, and get a good many fine cuttings in that way. I have some of the finest white grapes to be found in this section of the country."

I looked over this little nursery thoroughly—this one-man nursery—and could see where a lot of ready money would soon be coming in. I don't suppose the whole area would have measured more than an eighth of an acre, but one square foot of ground often nourished a shrub that a nurseryman would sell for several dollars.

Local demand does not require very much of any one thing, so it is best to have a wide variety and not to specialize too much. This fellow has a few apple trees that are selling at fabulous prices to-day. He got the cuttings from a newly set tree of this new variety, and grafted his own seedlings with them. Really this combination of the nursery business and neighborhood tree surgeon seems to be very profitable.



Niagara DUSTERS and DUST MIXTURES

have proved of such value in practical commercial use for the control of insect pests and fungus diseases that every year many more successful fruit growers are finding the dusting method indispensable in making summer applications not alone on account of the results accomplished but because dusting is so much faster and cleaner that it has proven itself about $\frac{1}{3}$ less expensive than spraying.

Just as Niagara Dusters are made exclusively for applying dust properly Niagara Dust Materials are ground to the exceeding fineness necessary to give protection. For best results always use Niagara Dust Materials with the Niagara Duster.

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and find out just what Dust Machines and Materials to use to protect Apples, Peaches, Pears, Cherries, Strawberries, Grapes, Potatoes, etc. Our years of experience are at your service. Our free book gives you the careful accurate information gained in successful commercial protection.

Southern cotton growers should write at once for information about the Niagara Duster and Niagara Calcium Arsenate which have proved of such commercial value in protecting cotton from the ravages of the Boll Weevil. These materials meet the requirements of the Department of Agriculture as outlined in the Coad system—introduced by Mr. B. R. Coad of the Delta Laboratories, Tallulah, La.

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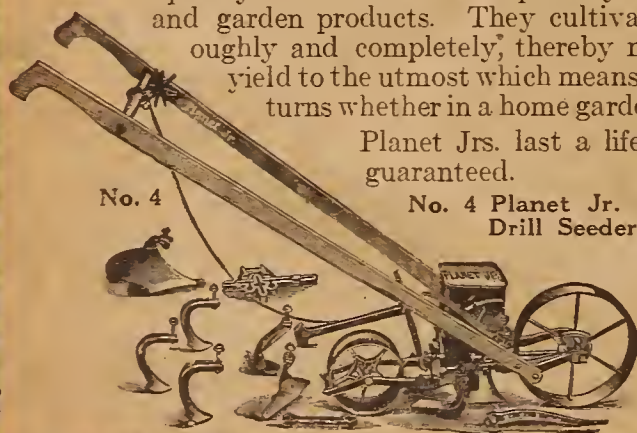
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Better Fruit and Vegetables

Planet Jr. Farm and Garden Tools have raised the standard of quality and increased the quantity of the nation's farm and garden products. They cultivate uniformly, thoroughly and completely, thereby making the ground yield to the utmost which means more profitable returns whether in a home garden or market garden.

Planet Jrs. last a lifetime and are fully guaranteed.



No. 4 Planet Jr. Combined Hill and Drill Seeder, Wheel-Hoe, Cultivator and Plow sows all garden seeds (in hills or drills), plows, opens furrows and covers them, hoes and cultivates them all through the season. A hand machine that does

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the work so thoroughly, quickly and easily that it pays for itself in a single season.

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than any other one horse cultivator and it does a greater variety of work in corn, potatoes and other crops requiring similar cultivation—and does it more thoroughly. Cultivates deep or shallow in different width rows and its depth regulator and extra long frame make it steady running.

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How They Farm in Far-off Algiers



We always thought that the Oriental husband must find some use for all his wives. Here we see a North African farmer plowing, with his two wives and donkey all hitched together. Perhaps this is the way he punishes them for flirting. Methods such as these still prevail in some parts of the world, but we suppose before many years these same two wives will be driving tractors.



The Alger Rue Ben Ali is one of the many narrow, winding streets of Algiers. This city is built on the side of a hill, so that many of the streets are nothing but flights of narrow stone steps. The buildings here are fairly modern, but the life is that of the Middle Ages. It would seem that the farmers of that country are getting ahead of the city people.



If it weren't for the turbans we might suppose this to be a scene in our own country—at least the mules look familiar. This Algerian farmer has found that a modern binder helps cut his cost of production just as much as it would anywhere else. Who says the world doesn't move?

Paying Debts With Borrowed Money

By Earl Rogers of Ohio

ALL farmers are either doing business on their own or borrowed capital. In either case, it is essential that we make our money earn at least six per cent, which is the usual borrowing rate. So, whether we are using our own cash or some other fellow's, it pays to think a bit about it.

Before I bought a farm I had plenty of cash to do business with without thinking of borrowing money. I always paid cash for what I bought, and had the old idea that to borrow money was about the worst form of bad management a farmer could indulge in. Now I can easily see, after using some of the bank's money to pay for my farm, that I was losing money in many cases by not letting a bill stand when the owner did not particularly want it paid. And I see some instances since I have been borrowing where I ought to have borrowed a little more in order to save interest.

Buying fertilizer is one instance that illustrates what I mean by this. Usually a fertilizer agent will give us a straight price and then throw off seven per cent for cash. I believe that it was six per cent this year, though, instead of seven. I know of many farmers who wait till the harvest to pay the fertilizer bill and also the seven per cent interest. In most cases we will say that this time is four months. It might be more, and is less a good many times, as July 1st seems to be the date here for settlement of fertilizer accounts. However, a bill of \$100 for commercial fertilizer would cost just three times the interest that a bank would charge. One can borrow the money of a bank and have it three times as long for the same amount. To me these little matters of \$4 and \$3 mean easy money.

The public sale is another place where

money is thoughtlessly wasted. Bills will come out and state terms of sale as nine months on a note or three per cent off for cash. In this case it is a loss to pay cash when your note costs less than regular interest rates. One's credit is as good at a bank, usually, as it is with his neighbors; it is simply a question of which costs less. All sales do not have the same terms. With some it is cheaper to pay cash for an article, while in others the owner is willing to hold the notes himself; and since he does not want the money, there is no inducement offered for it.

In dealing with some firms it pays to borrow money to pay the bills. If you have thirty days to settle or can get three per cent or five per cent for a cash settlement, it is easy to see which pays. One firm in my home town now offers five per cent off on anything sold if cash is paid before leaving the yards. That is really five per cent interest for a day against six per cent for a year.

Now, I don't want to infer that we should borrow all the money we can, or that it is wise to get in debt as much as possible. There are times, I am sure, with most farmers, when it might be better to lose a little interest than to try to stretch our credit too far. However, I believe most of us who are trying our best to get there on the farm will find a lot more credit waiting us at our banks than we ever supposed there was.

A man who had a fine field of alfalfa on his farm posted this sign: "Lime, phosphate, conservation of moisture, and inoculation got this alfalfa. Think it over."

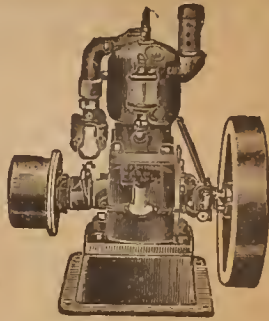
—New York Agrigraphs.



It's Easy to Move the CUSHMAN to the Job!

Don't waste time and labor moving your job to some heavy stationary engine. Move your Light Weight Cushman quickly and easily to the job.

The illustration on the right shows the Cushman 4 H. P. Engine, weighing only 190 lbs. Above same engine is shown mounted on hand truck—easy to pull around from job to job.



Weighing only 40 to 60 lbs. per horsepower—only about one-third what other engines weigh—Cushman Engines are really portable, whether mounted on wheels or not. Remember, one man can lift a Cushman 4 H. P., while two men can easily carry a Cushman 8 H. P.

CUSHMAN ORIGINAL Light Weight Power

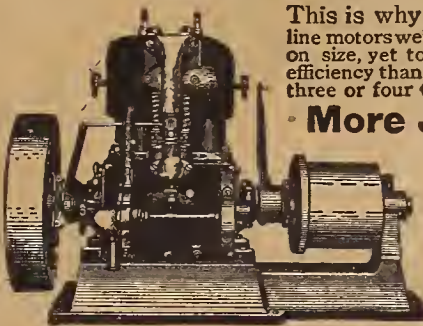
The Cushman is the original light weight, all-purpose farm engine. Unusual care in design; higher standards in all manufacturing processes, perfected balance, refinements in ignition, carburetion and lubrication, enable Cushman Engines to deliver

More Power per Pound

This is why we have been able to build a line of gasoline motors weighing only 40 to 60 lbs. per horsepower, depending on size, yet to secure as much power and even more general efficiency than is possible with engines of the old type weighing three or four times as much.

More Jobs—More Equipment

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8 H. P. Double Cylinder Weighs only 320 lbs.

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SOW SALZER'S SEEDS

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THE CLARK GRAVE VAULT

STATISTICS show that in three burials out of ten, disinterment is necessary. Unless the casket has been incased in an air-tight vault, the facts revealed are often distressing. No Grave is permanently dry. The loosened earth forms a catch-basin—little better than a cistern—from which heavy rains and melting snows cannot readily drain off. Absolute protection is furnished only by a steel vault, so constructed that no water can enter.

THE CLARK GRAVE VAULT is built into a "one-piece" bell from plates of heavy, Keystone (rust-resisting) steel, electrically welded, within and without, tested under tremendous hydraulic pressure and rigidly inspected. Its beauty of design and finish; permanence of material and construction, and our 20-year-old reputation insure your satisfaction and peace of mind, always.

Conscientious dealers recommend the Clark Grave Vault. For booklet of disinterment affidavits and proofs, address Dept. B-13.

The Clark Grave Vault Co.
Town and Starling Sts. Columbus, Ohio

Though necessary to dip three feet of water from this grave, after 2 years' burial, casket and contents were dry and natural as when buried.



No other vault, regardless of material, stands the tests to which the Clark has been successfully put. Clark Grave Vaults are guaranteed for 50 years.

At the present time they manufacture and wholesale only. They make the horseradish and sell it to grocers and dealers. If you can get a box of horseradish in Des Moines it isn't Marshall's.

Making Poor Farms Rich

By Chesla C. Sherlock of Iowa

YOU can make a good profit on your farm, no matter what its soil analysis may be, or what other natural obstacles are met. This has been proved over and over again by enterprising farmers in every community in the country.

But for the benefit of those whose memory needs refreshing I am going to tell you the story of four Iowa farmers who succeeded in making their farms profitable in spite of obstacles that would have discouraged the average man.

First, there is Brown, a progressive poultryman. Brown had been subjected to the various stages of chicken fever. He is a hard-headed farmer, the kind who farms through preference and instinct. He would have preferred to follow the plow on that 30-acre strip on the southeast corner of his farm, but it wasn't that kind of land.

It was rough and hilly, so rough that even if he cleared the timber off it wouldn't be possible to plow it—not even with the "tank" that climbed Pike's Peak!

Besides, Brown knew that to strip off that timber would be suicide for the land. In a couple of seasons there would be a few bald knolls absolutely denuded of all soil and fertility, for water runs fast down steep hills, and it will soon take most of the soil with it. Brown knew the land needed those trees for protection.

Why not pasture it? Well, he had been trying that for a good many years, and the best return he could figure from it, after deducting interest and expenses, was about \$5 an acre. He was averaging about \$30 on the rest of his land.

So he commenced to turn it to poultry. It is not necessary to tell every step in getting that poultry business on its feet. It took several years and a good deal of hard work, but Brown has made those 30 acres of waste land pay a good deal more than \$5 an acre, and has built up a business that extends all over the country.

This story, easily told and consisting of a generality, is backed up by actual facts. But it took something more than pipe-dreams to make it come true. Those who have given the chicken business a whirl know that it isn't all roses, but there are half a dozen poultry farmers in the United States who sell close to \$50,000 of poultry a year. If they fail to make money it is due to lack of business ability, and not because there isn't good money in it.

Up in Dallas County, Iowa, lives a farmer who has such sandy land that he couldn't get a crop out of it "to save his neck," simply because the soil got so hot that it killed out everything before it got a start.

He tried everything from corn to melons. His melons burnt up crisp in the space of just one day, after the spring rains ended and hot weather set in. He couldn't live on sand, so he put his 10 acres in fruit and grapes, and while he isn't becoming a millionaire over night he is doing well, a great deal better than many people imagine.

What does he do with his grapes, es-

pecially in these prohibition times? Well, some of them go on the local market, others are sold to a local pickle factory which is making grape juice as a side line, and the rest are sold to a canning factory 10 miles distant, where they are made into juice. Last year he shipped many grapes to a city about 40 miles distant, with good results. He can sell all he can produce these home markets.

Down near Des Moines lives a man named Marshall, who has built up a business with horseradish. You may laugh, but he has such a large business that he has his own delivery trucks, which are painted with his firm name, and his sales would make many a country merchant turn green with envy.

Several years ago one of the boys sold some horseradish from the home garden to make some spending money. People liked it so well that it set Marshall figuring.

Before long they were making "ood" of horseradish. They planted two acres entirely to horseradish, and sold a

Make Me Worthy

IT IS my soul to find
At every turning of the road
The strong arms of a comrade kind
To help me onward with my load;
And, since I have no gold to give,
And love alone must make amends,
My only prayer is, while I live—
God make me worthy of my friends.

—SHERMAN.

"you are going some," for people demand it above all other brands.

Thus a plant that is generally neglected in the home garden has been making a profit for the Marshalls for more than years.

Another farmer in Polk County, Iowa, has gone in for rhubarb on a scale similar to the Marshalls' venture in horseradish. This man has about 15 acres in rhubarb at the present time. You might wonder what in the world could be done with much rhubarb. Well, the fact is he has several markets with a steady demand for the rhubarb the year around. You can bank on it that he wouldn't be a rhubarb specialist if he wasn't getting some money out of it, for his land is worth about \$5 an acre.

In the first place, he has a stall at the city market where he sells rhubarb year round. In winter, he raises his rhubarb in cellars and caves. Then he operates a home cannery, putting up rhubarb which is sold to wholesalers.

Rhubarb has a medicinal value, and he disposes of a good portion of the syrup in a local wholesale drug house, which is in the manufacture of many of the drugs. So he keeps mighty busy with rhubarb, and has turned high-priced rhubarb into a better profit than he could make almost any other crop.

All of which points out that every acre of land, no matter how rich or how poor, can be made to show profit. Some time we will give you some more examples of making land pay a profit. They can be found in every locality.

What My Wife Has Done to Help Me

[CONTINUED FROM PAGE 83]

married, as we were too young to get married in our own State.

We were married on Saturday, and on Sunday we took our wedding trip around the city on a street car, which cost us 60 cents. When we went to our rooms that evening we had less than \$5 left, no friends in the city, not even anyone that we knew, and a month to work before I would receive any pay. Anyway, I worked the first week, while my wife arranged things around the rooms to suit her. We had an old trunk packed with provisions which we had brought from the dear old farm—the negatives, we thought then—so our expenses were not so great the first week. Oftentimes we would laugh about the rubes and hay-

seeds down on the farm. I said "we," she never would say much about it, smile when I would mention it.

The next Monday night when I came home she told me that she had some news for me. I was rather glad to hear some good news, as we had only \$2.50 and still nearly three weeks till pay day, and the trunk of provisions was about gone. She told me that she had found work in the laundry just across the street, and that she was going to work in the morning, and would receive her pay in full at the end of each week.

Well, we worked together in that laundry for three years, and by this time we had given up talking about the rubes and hayseeds. So one morning I took the train for my old home town to see if there were any farms in that vicinity for sale. Yes, I had saved enough to make a first payment on a farm and to buy horses, cattle, and machinery.

BOYS—Here's the Outfit You Want

Better Batteries

Better Light

Materials to make up three batteries



Comes complete with heavily nicked flashlight case

THINK of it! Three strong, fresh batteries—a full year's supply. Make them up yourself and be sure of a powerful light always. The beauty of this outfit is that when a battery wears out, you can make up a new one in a minute's time. Mail the coupon to-day. We'll tell you how to earn one of these wonderful outfits.

FARM AND FIRESIDE, Springfield, Ohio

Mar. 20

Gentlemen—Please tell me how to earn the Make-UR-Own Battery and Flashlight Outfit.

Name..... R. F. D.....

Post Office..... State.....

Pick Your Co-operative Manager Carefully

By J. T. Bartlett of Colorado

THE success of any co-operative enterprise depends, in the first place, on the loyalty of individual members, but a factor in permanent success equally important is the manager. Frequently farmers' organizations have failed dismally because the manager selected was incompetent or dishonest, and sometimes the failure has occurred after a brilliant preliminary success, when a capable manager has resigned for more remunerative work, and a new, untried man was put in. A good manager well-nigh assures the financial success of the enterprise, and his capable supervision in itself largely guarantees the loyal adherence of members. The successful manager is often underpaid, very seldom paid too much. He should be paid well. Help him in his work, whether it is part time or whole time. "That is what he's paid for" never yet got an association or an individual member anywhere.

With small associations the manager is frequently called the secretary, but the difference in name doesn't lighten his difficulties. Co-operative purchases of supplies is one of the simplest, most successful plans; yet in handling the business a secretary can have all kinds of troubles.

"The first difficulty is to find time for the work," says one manager. "The next is to get a complete car lot of goods ordered by members before the car is ordered. When it does come in, however, there is demand enough for two carloads, especially if bought at a bargain. If not, the car may be disposed of with difficulty. The best solution is to warehouse the goods. This involves capital other than deposit notes.

"Slow deliveries are another great difficulty. When we first started we sold as cheaply as possible. When we began to carry goods we found ourselves in a hole. Now we sell held goods at almost current prices. Goods from the car are sold at an advance of the secretary's commission of two per cent, plus one per cent."

WHERE a secretary giving part time to management exercises his business knowledge and judgment in buying and selling, a commission basis is found more satisfactory than a straight-salary allowance. He can be helped immensely in his work if farmers are prompt in leaving their orders. The member whose practice is to buy at local store or of association, as one or the other appears the best purchase, is nearly hopeless as a co-operator. He is more of a liability than an asset to a co-operative movement. An arrangement under which the member taking goods from car gets

a better price than the member buying held warehouse goods helps the secretary, and puts a premium on early ordering.

The possibilities of live-stock shipping organizations are unexcelled, yet this type of co-operative organization spreads slowly in comparison with its opportunity. The manager "makes or breaks" the live-stock shipping club. No man in whose ability to assemble and sell live stock the members have not absolute confidence will do. The member selected for this work is respected for his ability, and he ought to be well paid for it. More than anyone else, he will have to keep the club together against the repeated, deliberate assaults of local private buyers. If poorly paid, he cannot long remain blind to the greater opportunities for himself in private trade.

A LIVE-STOCK shipping association which, though inexperienced, did well in 1918 has one manager for hogs and another for cattle. The hog manager is paid 15 cents a head commission; the cattle manager is remunerated by the trip. The managers do well, and are encouraged to promote in every way possible the general welfare of the association. During the first months of operation this association made four per cent on the selling price of its live stock—by shipping co-operatively.

As co-operative organizations grow larger, time and again managers "go over" to private concerns which offer larger salaries. Nobody can blame the manager. The truth is that no concern can afford to pay the successful manager more than the co-operative organization can. It should be flattered by offers to its managers and take delight in meeting them.

Big and little associations make the same mistake. Last year the manager of a very successful Western fruit union, a tactful, honest man, exceptionally well qualified for the work, an official who had steered the co-operative concern through its stormiest days, went over to a wholesale firm just opening a buying business in the district. In six months he had developed a much larger shipping business for the private concern than the fruit union had. It is true, he operated over a larger territory, yet he was always in competition with co-operative concerns. Both private and co-operative companies did a business of hundreds of carloads, and a difference of a few hundred dollars in the salary of a manager who was accomplishing successful operation was nothing to stickle at. Few co-operative enterprises err on the score of over-large salaries for employees.

Prize Contest Announcement

WE WILL pay \$5, \$4, \$3, and \$2, respectively, for the best four photographs taken of farm life and by farm folks. For all others that are accepted we will pay \$1 each.

Everyone likes to see photographs of real farm folks or scenes. Here is your chance to let other people see what good luck you've been having with your own camera. These pictures must be original photographs of farm scenes, or of farmers and their families. Professional photographs are barred. Only clear prints that will reproduce well will be considered, and they should not be smaller than 2x3 inches. We don't want stiff, formal family groups or uninteresting scenes of buildings, fields, or animals. We want to see *you* and *yours* in your working clothes, and not "all dolled up."

Preference will be given to pictures of children, and no picture will be accepted that does not have a human being in it. Animals will be fine, provided there are people with them. No picture that does not give the names and addresses of the people in it will be considered. Other things being equal, we will choose the ones that have short, interesting accounts of who and what the people are and what they are doing. If you are a breeder of pure-bred live stock, say so; or if your children are kid club champions be sure to mention that too. Names of the animals and their records would be interesting, and any funny capers that the children or the animals have cut will add to the value of the picture for our use. The contest closes April 30th.

Be sure and have your own name and address on each separate photograph, and if you wish them returned enclose return postage.

Send all pictures and letters carefully wrapped to Picture Contest Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

THE EDITOR.

Advance Spring Sale New 1920 Models SEPARATORS

A 30 Day GALLOWAY OFFER!

Listen!

Twenty years ago, I was down on a farm in Tama County, Iowa, milking cows and teaching calves to drink skim milk out of a pail. From that time I have had a wide and varied experience in agricultural and industrial lines.

We have made many wonderful offers through the farm papers and over 300,000 satisfied customers have profited as a result of these bargains, but I can say truthfully and without hesitation that this special cream separator offer we are making here is positively the biggest and best we have ever made.

But there's a reason for it. First, because we have added \$1,000,000 new capital to our company which has enabled us to increase our production so we can make 15 cream separators where we used to make only one.

Second, because the Cream Separator is one of our specialties.

Third, because our factory experts have the equipment and the production of the new Galloway Sanitary Separator down to the finest point of mechanical perfection in every detail. All parts are made on dies and jigs standardized and alike turned out by the thousands on the most modern automatic machinery, every part interchangeable, insuring great efficiency in production and a separator as good as human brains, mechanical skill and ripened experience can make it.

For these reasons and because we sell direct—straight from our factory to you, which any man can see enables us to cut the price right down to bed rock, and save a lot of money in one single purchase even in these days of profiteering and high prices.

That's why I personally want you to answer this ad today so you can get our 1920 catalog and make your own comparisons with any other separator offered you from catalog or store. I invite you, at our expense, to compare the new 1920 Galloway Sanitary Separator in price, design, finish, simplicity, mechanical construction and close skimming efficiency with any other separator sold by anybody any way at any price and we will leave it entirely up to you at our risk to be the judge.

(Signed)

Wm. Galloway

Sold Direct from Factory

This plan saves you the difference between my price and the price of the high-priced separators. I cut out all waste and sell you at the rock bottom factory price. You get your new Galloway Sanitary right fresh from my factory floor. You buy in the most economical way—the modern way of doing business.

Skims Close in Cold or Warm Weather

This new 1920 Separator is not just a warm weather skimmer. But when your cows are on dry feed this New Sanitary Model will skim just as close as when the cows are pasturing. In any weather your separator should always skim up to rated capacity, and particularly in the spring and summer, when the grass is green and the milk flow is heavy, you want a Separator like the Galloway. Then time counts. A few minutes saved in the morning and evening mean just that much more time in the fields.

Trial Test for 180 Milkings

Use and test one for 90 days. Note its strong, sanitary base; Tank of pressed steel; Heavy tinware; Sanitary bowl; Discs separate from each other for washing. Takes only a few of them to skim a lot of milk. Cream pail shelf and bowl vice combined with hinge for lowering. High crank shaft (just 50 revolutions per minute). Oil bath and sanitary drip pan. 4 good sizes: 375, 500, 750, 950 lb. capacities.

Mail Coupon Now for Free Book

Send coupon for Galloway's big new Separator Book and low 30 day price offer. See how much you save when you buy at this sale direct from Galloway. Send coupon today.

WM. GALLOWAY, Pres.

The William Galloway Co.

393 Galloway Station, WATERLOO, IOWA



MAIL THIS!

WM. GALLOWAY, Pres.

The Wm. Galloway Co.

393 Galloway Station, WATERLOO, IOWA

Please send me your 1920 Separator Book and low price of your 30 day offer.

Name

P. O.

R. F. D. State

ROUGH ON RATS

Clear your house and keep it free of rats and mice with old reliable "Rough on Rats." Kills them all quickly—and they "Don't Die in the House"

"Rough on Rats" successfully exterminates these pests where other preparations fail. Mix it with foods that rats and mice will eat. Change the kind of food whenever necessary. Don't be pestered—get "Rough on Rats" at drug and general stores. Send for booklet, "Ending Rats and Mice."

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Originator of "Rough on Rats"

YOU KNOW IT PAYS

Cooked food makes your live stock produce better. Warm water for the cows means more milk. Hogs eat more when given warm food; it digests easier, resulting in more rapid growth, larger frames covered with solid meat. If you expect eggs in winter, you must feed warm food.



Have ALL the HOT WATER YOU WANT

IT PAYS BIG

Farmer's Favorite Feed Cooker and Agricultural Boiler

For butchers, meatmakers, poultrymen, stockmen, dairymen and fruit growers. Portable, use indoors or out, as boiler or stove. Burns chunks, long sticks, cobs—anything. Guaranteed. Write for Folder and Prices.

Lewis Manufacturing Co., Dept. 200, Cortland, N. Y.

Our Letters to Each Other

This is where we take a few lines every month to talk things over, so if you've got anything on your mind, let's hear from you

THERE are a few folks left in the world who still have the old notion that farmers are "different" from other folks. What rubbish!

But yet, a man came to us the other day and said:

"Say, you know I believe your farmer friends are beginning to take a little pride in their personal appearance. I just got back from a trip and I met a lot of real, hard-boiled farmers who wore just as good clothes and looked just as well in them as anybody."

"Yes," said we, "and here is a little more news that will surprise you: George Washington is dead, Abraham Lincoln was shot while attending the theatre, and Robert Fulton invented a boat the other day that runs by steam."

He gasped, and we went on:

"The trouble with you and the other fifty-nine million nine hundred and ninety-nine folks who live in the city is you don't know anything about the thirty million folks like you who live in the country."

"You say it looks like my farmer friends are beginning to take a little pride in their personal appearance. It will probably flabbergast you to know that they always have taken a little pride in their personal appearance, though some of them may not always have had the means with which to gratify it."

"You talk about the farmer as though he were some kind of a curiosity, and I dare say he is, to you; but I assure you, my friend, that he is not half the curiosity to you that you are to him; and to those of us who take the trouble to look upon him, not as a 'farmer,' but as a *human being* who happens to have chosen the business of farming, he is a joy to deal with and a pleasure to know, and he with his farm can give you and me cards and spades on the pleasure and profit of real life."

Why Heads Count

The man we had to speak thus harshly to had no real grudge against farmers. He just didn't stop to think what he was saying. We like men who think.

That kind of man is doing what God intended him to do with that marvelous little machine He set on top of the human shoulders. It's no mere ornament, folks. No, that little machine at some time or another figured out everything there is in the world, except nature. It built every piece of machinery on your place—yes, and discovered, in what appeared to be just a chunk of rock, the raw material from which that machinery is built, too. That little machine made the clothes you wear, the house you live in, the books you read, the cropping methods you employ, and the complicated markets and factories and stores you send your crops to after you grow them.

That little machine—yea, the very one you carry around at the tip of your neck, gave us electric lights in place of candles, steam heat instead of open fires, plenty of books instead of a few blocks of carved stone, and the reaper and binder in place of the cradle and gleaner.

Every atom of stoop that has gone out of the world's shoulders, every crick that has been relieved in the world's back, is directly traceable to the work of the little hidden miracle that works so silently and so wonderfully, whenever its owner gives it anything to work on—beneath its thin bone shell.

The more you give your brain to do, the more and better it will work for you. It is just like anything else. If you don't exercise it, it will lie fallow, like good seed in unfertile soil, and rust out, like good machinery abandoned in the field. Your brain will grow if you feed it something to grow on. If you feed it bad things to grow on, it will grow bad; good things to grow on, and it will grow good.

Actually grow, we mean. You don't believe that? Then read this letter from E. S. of Washington, who has looked into the matter and found some rather startling facts. Here is the letter.

FARM AND FIRESIDE

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You are invited to ask questions of any or all of these men in their respective fields. State your problem clearly and fully, enclosing a stamped self-addressed envelope for reply. Address each editor care of Farm and Fireside, 381 Fourth Avenue, New York.

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Lloyd George's Case

"After twenty-five, human beings are not supposed to grow except to put on weight, but it has been stated and proved that there are many instances where the human head continues to grow, and that men's heads have been known to increase in size after they were forty."

"It is quite well settled among doctors that just as long as the human brain is active and kept rigorously at work it develops, and the head increases, in very many instances, in size."

"The head of Lloyd George, prime minister of England, increased in size from being nearly 23 inches in circumferential measurements to 23 1/4 inches between the time he was forty and forty-eight years of age. In other words, after forty his head grew a quarter of an inch in eight years. Robert Blatchford author of 'Britain for the British,' increased the circumference of his head from 22 1/8 inches at fifty years of age to 23 1/8 inches before his sixtieth year."

He Uses His!



Here is Blair and his combination outfit doing all these jobs that he speaks about, at once



Another picture of Mr. Blair's carefully planned-out work in his Montana wheat field

Speaking of using your head, here is a fine letter from Mr. R. P. Blair of Sidney, Montana. He has used his.

"DEAR FARM AND FIRESIDE: I have been in bed for four days with a sprained back, from trying to lift too much. So I have just found time to read the 'How I Make My Farm Work Easier' article."

"I liked the stories first rate, but I didn't see any from Montana, so I will send mine in."

"Last spring, when I found farm work rushing and help scarce, I changed my four-horse hitch on my ten-foot drill over into a six-horse hitch, and tied a two-section drag on behind, and put six horses on the drill, and seeded and dragged at one operation. Not only did I save time, but I also smoothed the moist dirt

back on the seed so that it was sure of immediate germination."

"Then I wired a short pole on the back frame of my gang plow, letting it stick out over the plowing about four feet. To this I tied a light, tough horse hitched to a section of a harrow. This would double-drag the ground as fast as it was plowed, and saved the moisture from evaporating."

"I use my outside hay rope to unload and load my rack. I fasten the rope to both ends of the rack, then drive the team up until the rack swings clear of the wagon. Then I have someone run the wagon out, and I lower the rack to the ground, and vice versa, when I want to load it up again."

"Then, at harvest time this fall we had a very short crop of grain on account of the drought, none of the wheat was knee-high, but it was a good quality. It was almost an impossibility to cut it the usual way with a binder, so I went to town and ordered a 12-foot header. This cut the grain, and elevated it into a header box driven alongside, at one operation, from which it is taken direct to the stack."

"In three weeks' time I cut and stacked 235 acres, and cut enough for my neighbors at \$1 an acre to pay for all my help,

and had \$100 left. I figured I saved a bushel to the acre over the binder way, which at the then price was \$434.50."

"The machine cost \$410, so I figured that with the \$100 I made cutting I am ahead \$124.50 besides the machine. I sent a couple of snap-shot pictures if you care to use them."

R. P. BLAIR."

Queen Mary's Crown

The subject of heads seems fated to control the page this month. They pop up at every turn in the letters we liked best this time. Here's one from Mary M., out in Indiana, enclosing a newspaper clipping telling about Queen Mary's crown, and asking if what few kings and queens there are now left really do wear crowns.

Well, we suppose they do, Mary, but we don't know—we never caught them at it. But before we go on, maybe the other feminine readers would like to see your reprint from "The London Evening Standard," which says:

"The banquet at Buckingham Palace to the President of Brazil was a very brilliant function, and in special honor of the guest of the evening the queen ordered up her crown from the Tower."

"This is a very beautiful piece of jewelry which is the personal property of Queen Mary, presented to her by the Marys of the empire. It has also set in it the great and historic diamond, the Kohinoor, given to Queen Victoria by the East India Company, as well as two large portions of the Cullinan diamond which the Union Government of South Africa gave to Edward VII."

"Queen Mary's crown is ingeniously designed, so that the top arches can be removed, leaving a magnificent diadem or circlet. It would probably be thus that the queen would wear it on a state occasion, such as the banquet to the Brazilian president."

Uncrowned Queens

That is all very interesting, Mary M., and probably true. It sounds like it, but it really doesn't mean a great deal. A crown is merely a symbol of real or presumed superiority in the mind and character of the person who wears it. If Queen Mary, by the service she has done in the world, deserves her crown and wants to wear it, she is entitled to, though personally we should consider it a very uncomfortable privilege to deck our head with anything metal. (Confidentially, we wouldn't even wear anything so hard and heavy as a stiff hat.)

And we say, if she deserves it she can wear it; but then, dear Mary M., if you deserve one and wear it, so can you—and with just as much right as the Queen wears hers. She is the Queen of England. While you—well, you may be the queen of Neighborhood Goodness, or the Queen of Thoughtfulness and Consideration, or the Queen of Good and Useful Work Accomplished.

And for these qualities and for many others like them, if you possess them you hold title to a crown for each, if you want it. Yes, even if you are only the Queen of Home-made Apple Pies, and want a crown for it, you should have it. Nor, on tangible culinary evidence of your queenliness in this respect being presented to me, would I be the last to award the crown to you. (In short, we do like apple pie.)

But indeed, Mary M., I am not joking. There are literally thousands of uncrowned queens in these United States. I personally know a few of them. But that space forbids, I would like to tell you about some of them, and in saying good-by for this time let me add that not a one of them I would mention would be crowned for just good looks.

George Martin

"I Am Going To Buy This Spreader This Spring!"



- ① Low Down
 - ② Light Draft
 - ③ Extra Strong
 - ④ Chain Drive
 - ⑤ Steel Distributer
 - ⑥ Solid Bottom
- The Original Wide-Spreading Spreader.

Say this to yourself—and then do it. Decide to pay up your debt to your soil. Decide now to spread with the New Idea—this year—this spring!

MAKE this statement, and plan now to carry it out. At least, get all the facts at once. Not next year, but **this year—this spring.** For now is the time to prepare for heavier crops this year. And regular, even spreading with the New Idea will do this. It will put new blood—new life—into your land. It will ripen your soil for this spring's seed.

Why the New Idea?

Not simply because the New Idea is the original wide-spreading spreader do we urge you to buy it, **now.** Yet that leadership does mean much to you. It gives you valuable patented features that can be had **only in this machine.**

And not because it is the best known and the largest selling spreader in the world today. Though this fact protects you. It confirms your judgment—backs it with the approval of thousands.

The real big reason is this: **You want the New Idea Spreader because it spreads manure, lime, and straw most quickly, most thoroughly, and most profitably.**

You want it because of the labor it saves—because of the extra years it lasts—and because of the light haul it gives with a heaped up load.



Built by Spreader Specialists

The New Idea Spreader was not built on the spur of the moment to meet competition. It is the result of 20 years' constant improvement by Spreader Specialists. Untiring effort on the part of the men who have specialized on this one vitally important farm implement for a business lifetime—accounts for the present prestige of the New Idea.

Spread Straw, Lime, Manure With One Machine

The New Idea is strongly built. It has no gears to break. No complicated parts to get out of order. A simple, low-cost attachment makes it a big-capacity straw spreader. This and its wide spread, its perfect shredding and its adaptability to every type of farm everywhere, mark it **the spreader for you—this spring.**

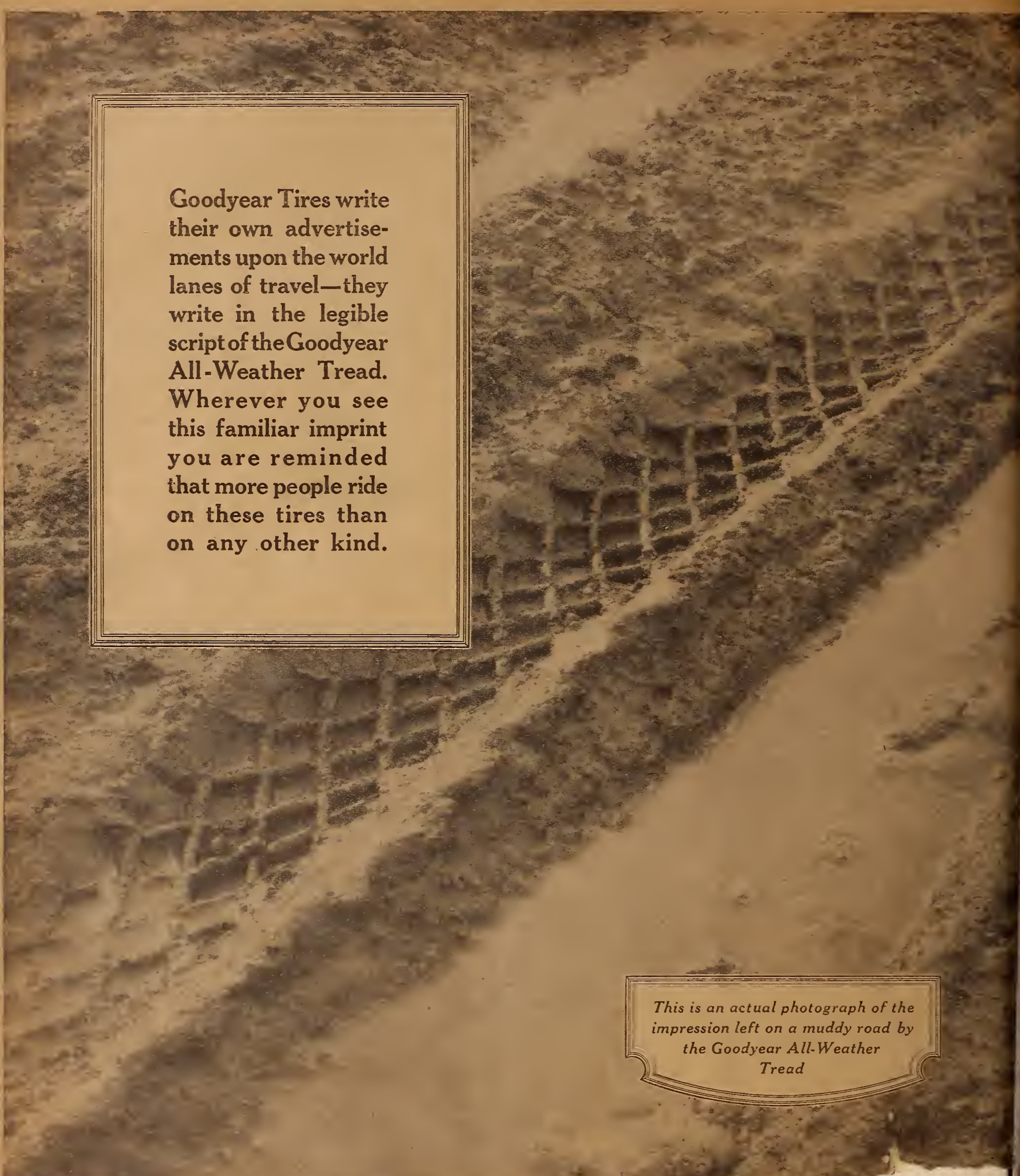
A network of New Idea branches covers the country. If needed, spare parts service is given quickly. And in every community there is a progressive dealer who handles New Idea Spreaders and has machines on hand for early spring delivery.

To make certain of bigger crops through better soil fertility, order a New Idea. To make certain of getting your New Idea this spring, order it now—today!

Be sure to ask your dealer for a free copy of our valuable book, "Feeding the Farm." It is filled with vital facts on fertilizing that you will want to know.

New Idea Spreader Company **Spreader Specialists**
Coldwater Ohio





Goodyear Tires write
their own advertise-
ments upon the world
lanes of travel—they
write in the legible
script of the Goodyear
All-Weather Tread.
Wherever you see
this familiar imprint
you are reminded
that more people ride
on these tires than
on any other kind.

*This is an actual photograph of the
impression left on a muddy road by
the Goodyear All-Weather
Tread*

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LaCrosse TRACTOR

Save \$355!

12 Drawbar
Horsepower
\$895

IN the new price of \$895 for the La Crosse Model G Tractor you get a tried and tested three plow standard tractor at less than \$75 a drawbar horsepower. Our standardized quantity production has enabled us to reduce the price \$355. You get the benefit.

The price of \$895 is for the La Crosse Model G complete with lugs, belt pulley, fenders and governor all ready for work. This is exactly the same tractor which formerly sold for \$1250. Not a part has been changed.

Fewest Number of Parts

The La Crosse is the tractor with one third less parts than other trac-

tors. This means that the upkeep of the La Crosse is very low—there are fewer wearing parts, fewer parts to replace. All parts are built to work together and fit perfectly.

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La Crosse Tractor Company

Department 043

La Crosse, Wisconsin, U. S. A.

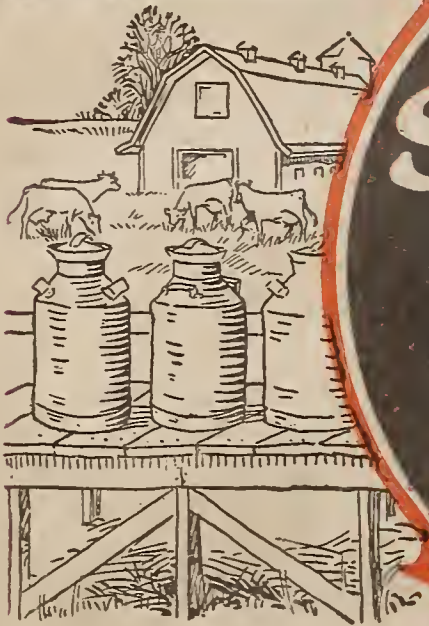


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a Happy Farmer*

No Profiteering!

**NO RAISE
in PRICES**

**NO CHANGE
in TERMS**



**ONLY
\$2 DOWN
A YEAR
TO PAY**

More Than **175,000**
New Butterfly
Cream
Separators
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Think of It!

You can still get any size of the New Butterfly Cream Separator you need direct from our factory at former low prices and for only \$2.00 down. By this plan your separator will earn its own cost and more before you pay. You won't feel the cost at all. More than 175,000 farmers have obtained this high-grade separator on this self-earning plan. You can do the same.

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no interest to pay. No extra. Prices we quote include everything. We also make 4 larger sizes of the

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up to our big 800-pound capacity machine shown here—all sold at similar low prices—on our liberal terms of only \$2 down and more than a year to pay. Every machine guaranteed a lifetime against defects in materials and workmanship.

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You can have 30 days' trial on your own farm and see for yourself how easily one of these splendid machines will earn its cost and more before you pay. Try it alongside of any separator you wish. Keep it if pleased. If not you can return it at our expense

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FARM & FIRESIDE

The National Farm Magazine

APRIL 1920

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Frederic Stanley

What's Wrong With the Country Banker?



For Economy and Satisfaction—

EVERLASTIC ROOFS are the most economical and satisfactory it is possible to buy. They are low in first cost, inexpensive to lay, and very durable.

They are satisfactory because they are handsome in appearance, staunch, weatherproof, and highly fire-resistant.

For your home or any other structure where appearance is essential, no roofing will produce a more artistic effect than Everlastic Shingles.

The heavy surfacing of real crushed slate gives them the rich color (red or green) of the natural slate which long exposure to the weather makes even more beautiful. They contain no artificial coloring; painting is unnecessary.

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A recognized standard among "rubber" roofings. Famous for its durability. Made of high-grade water-proofing materials, it defies wind and weather and insures dry, comfortable buildings under all weather conditions.



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Everlastic Multi-Shingles (4-in-One)



Made of high-grade felt thoroughly water-proofed and surfaced with crushed slate in beautiful natural slate colors, either red or green. Laid in strips of four shingles in one at far less cost in labor and time than for wooden shingles. Give you a roof of artistic beauty worthy of the finest buildings, and one that resists fire and weather. Need no painting.



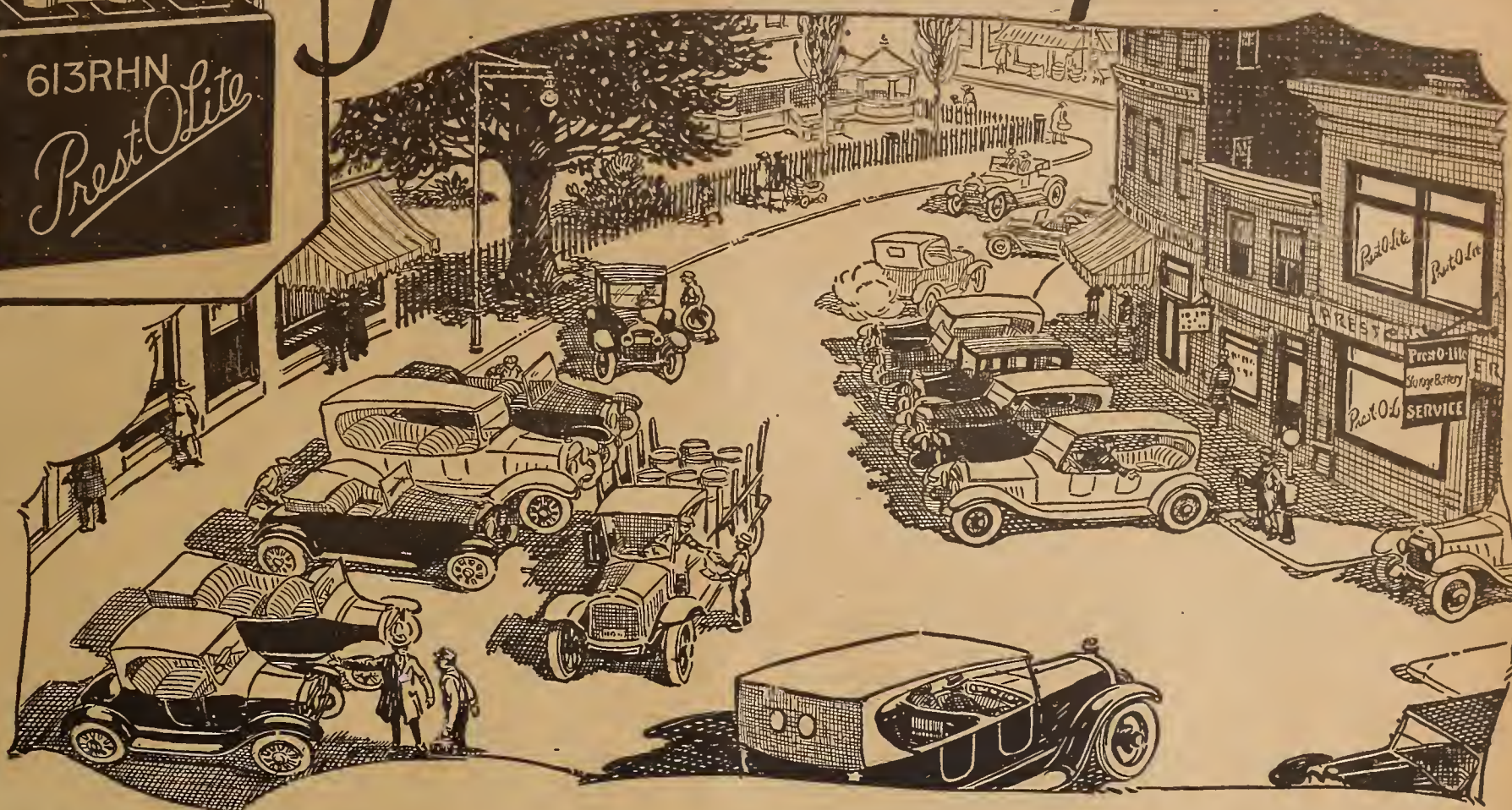
Everlastic Tylike Shingles

Made of the same durable slate-surfaced (red or green) material as the Multi-Shingles, but cut into individual shingles, 8 x 12 3/4 inches. Laid like wooden shingles but cost less per year of service. Need no painting.





for Every Car



EVERY car owner can have the extra long battery life and never-failing service that Prest-O-Lite Storage Batteries give. For there is a Prest-O-Lite battery of correct type and capacity for every car, whatever its make or model.

Country driving demands a *rigid*, dependable battery of super-strength and power—a battery that does not require you to make *special trips* to town for attention—a battery that will withstand the jolts and give you sure starts, bright lights and freedom from battery worries.

Such a battery is the Prest-O-Lite. Its sturdy construction makes it the one best battery for the farmer's car.

Any Prest-O-Lite Service Station will install a Prest-O-Lite battery in your car at once, or when your present battery wears out.

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Car	Correct Prest-O-Lite Battery
Allen	613 WHN
Anderson	613 WHN
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Auburn	611 RHN
Biddle	615 RHN2
Briscoe	613 WHN2
Buick	613 RHN
Cadillac	613 CM2
Case	613 RHN
Chalmers	613 RHN
Chandler	613 RHN
Chevrolet	611 RHN
Cleveland	611 RHN
Cole	613 BHN
Columbia	611 RHN
Comet	611 RHN
Commonwealth	613 RHN
Crow-Elkart	611 RHN
Davis	613 RHN
Dixie Flyer	611 RHN
Dodge Bros.	127 RHN
Dorris	613 RHN
Dort	611 RHN
Elcar	611 RHN
Elgin	611 RHN
Fiat	619 WHN

Car	Correct Prest-O-Lite Battery
Ford	611 RHN
Franklin	129 JFN
Grant	613 RHN
Haynes	613 RHN
Hollier	127 RHN
Holmes	611 RHN
Hudson	613 RHN
Hupmobile	611 RHN
Jackson	611 RHN
Jordon	613 RHN
King	615 RHN
Kissel Kar	611 RHN
Kline Kar	613 RHN
Lexington	613 RHN
Liberty	611 RHN
McFarlan	619 WHN
Marmon	615 RHN
Maxwell	613 WHN
Mercer	619 JFN
Mitchell	611 RHN
Moline-Knight	613 RHN
Monitor	613 RHN
Monroe	611 RHN
Moon	613 RHN
Nash	611 RHN
National	615 RHN2
Oakland	613 RHN

Car	Correct Prest-O-Lite Battery
Oldsmobile	611 RHN
Olympian	611 RHN
Overland	611 RHN
Packard	610 WHN
Paige	613 RHN
Paterson	611 RHN
Peerless	615 RHN
Pierce-Arrow	617 RHN7
Pilot	611 RHN
Premier	613 RHN
Reo	613 RHN
Roamer	613 RHN
Saxon	611 RHN
Sayers	613 WHN
Scripps-Booth	613 RHN
Standard	615 WHN2
Stearnes-Knight	129 RHN3
Stephens Six	611 RHN
Stevens-Duryea	613 CM2
Studebaker	613 RHN
Stutz	615 RHN
Templar	613 RHN
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Prest-O-Lite Storage Battery



THE *everlasting faithfulness* of the Hupmobile makes a strong appeal to the average American family.

They admire steadfastness in a motor car only a little less than they do in a friend.

The Hupmobile *stays right* in a way that makes a man say:—"Well, there's one investment I've made, that's paid out."

What's Wrong With the Country Banker?

By One of Them

Illustration by Stuart Hay

NOT long ago an old friend and business associate of mine, a banker-farmer like myself, said to me:

"Jim, more farmers have failed through lack of capital than from any other cause. Failed by quitting the game, broken and discouraged; or failed in a still greater sense of the word by struggling along, putting the best of their lives into soul-deadening toil that has yielded them scarcely a living."

I have looked at the thing from every angle in thinking it over since, and I know he is right. And I cannot help wanting to tell what I know of this great problem to farmers and country bankers, hoping that it may help both of us to get together to our mutual benefit.

I know the farm finance problem from both sides. My father left me, when he died, the responsibility of a number of farms in a prosperous farming section. He also left me a controlling interest in the town's largest bank, and in due course of time I took up the guiding reins. For over thirty years now I have managed this bank. If I do say it myself, the bank has prospered. We have not grown much, that is true, but we have gone along from year to year with very small losses and with a substantial surplus every year available for dividends.

My farming operations have also been successful. I have worked up a system of share farming which in this region is noted for its efficiency. My farms are richer to-day than ever before, and I have helped many of my tenants to become landowners.

Other banker-farmers around here have not been so successful. It has been due largely to their unwillingness to back their farmer customers financially in the way good farmers must be backed.

THERE was Brown, for example. He started as a banker-farmer. He is a good banker and a good business man. He is considered rather progressive. But he could never make farming pay. He dealt with as good a class of farmers as I did, but he didn't finance them in a way that would give them a chance to make good. He wouldn't back a man for a cent more than he absolutely had to for permanent improvements, such as drainage, better buildings, or labor-saving equipment. He stood for only the cheapest fertilizer and seed. His tenants couldn't make money. They usually left after a few years, discouraged and poorer than when they started in. Sometimes they said hard things about Brown behind his back, while he openly told people that they were very poor farmers.

Many of these men made good elsewhere, and some of them now own land of their own. Brown never could see that it was his fault, not theirs, that they didn't succeed. He got started on the wrong track with farmers, and never did get off. He, like too many bankers, thought that all a farmer needed was a piece of land and a strong back. It never occurred to him that a farmer needs working capital and time to think and use his head, just the same as any other business man. In that he is typical of too many country bankers.

I attribute what little success I have had to a broad policy of financing farmers for everything they need in the way of buildings, modern equipment, and machinery,

and then helping them stock their farms with high-grade livestock. My policy has always been to encourage the use of commercial fertilizers and good seed. These things take money, which many times the man hasn't got, so I loan it to him. I have lost in but very few cases, and it has doubly paid me in the long run because of the better crops and higher grade livestock we have produced, and also in the

father left him a small farm and gave him a college education. Johnson married young and started farming the home place. He did fairly well, but his 80 acres were not enough, and so he bought another adjoining farm of 100 acres. Everyone predicted that he would be a success. To many people he is a success. He has raised and educated a large family, and is about paid out on his land. But he has never

he is a broken man, and his children, schooled in the hardships of this sort of a farm existence, are all going to the city. Once or twice I have tried to help him; I have urged him to borrow money to make needed improvements, but his answer has always been a sad shake of the head as he replied that he couldn't afford it.

To return to the bankers, they have hesitated about making loans even to good farmers. Other fields of business have always seemed more attractive. Commercial enterprises have seemed to be better risks. With a mortgage it was different. We were always sure of our money then. We weren't on an unsecured loan, and many good farmers must borrow that way. I made an exception of my own tenants because I felt that I could supervise their use of money, and thus make it safe. I know now that we were wrong in this policy, but it was the prevalent one nevertheless, and still is in too many country banks.

Oh, yes, there was a time when I, too, failed to realize that only through the farmer being prosperous could my bank be prosperous.

This policy of the country banks to pinch the farmers and to be more lenient with commercial enterprises has been due, however, to several very natural causes. Farming has never been looked on as a business proposition. It has been a home industry where if John was a good man we expected him to succeed. If he didn't succeed we never considered that there was anyone to blame but John himself. We never thought of lack of capital as being one of the prime factors. Capital that we should have supplied.

FARMING has never been as profitable in a money way as other professions in this country. For many years there was over-production that kept prices down. Land and labor were cheap. A farmer was a man who made a living off the land, and only occasionally were any big fortunes made out of farming. It has only been since the outbreak of the Great War that food has been considered seriously by anybody, even farmers.

I seriously doubt whether farming ever will or ever should be paid in cash as highly as other professions. There are so many things a farmer gets that can't be expressed in dollars and cents. It is pleasanter than puddling steel, digging coal, or office work.

But there is absolutely no reason why farming should not pay on invested capital an interest rate that will enable farmers to compete successfully at the bank with seekers of capital to be invested in other business. And certainly the farmer should receive a fair return on the brains he puts into his business, to say nothing of the physical labor. Modern farmers know what "labor income" means, and will not be content unless their farming business shows a fair return on labor expended, in addition to interest on capital invested.

That day when most farmers were content merely to make a living has passed, and I am glad to see it go. I am glad because I know the struggles and hardships of the old days. There were many years during the "nineties" that I did not collect a cent of rent, either in cash or produce, from my tenants. Most of these men pulled through and paid every cent of back rent. Some of them own their farms to-day, and are [CONTINUED ON PAGE 35]



"I always wondered what the cages at the banks were for," remarked one farmer. "Now I know. They're to keep the bankers from biting their customers."

increased fertility of the land [which my tenants and customers farm.

But if some farmers have been held back by narrow-minded, short-sighted bankers, other farmers have held themselves back by a foolish refusal to use their credit to finance themselves from good bankers, and get ahead.

I have seen many farmers fail in this community because of their objection to borrowing a little needed capital. Some have failed hard enough to make them quit farming altogether. Others have kept on failing every year, only they didn't know it. They still have their farms, some are out of debt, many aren't; and the great majority have been just making a living and enough over to encourage them to keep at it. The principal reason for their mediocre success is lack of working capital. Money has been "tight," and they have hesitated to borrow when they could avoid it.

Johnson is a typical farmer failure. He came of good New England stock. His

been prosperous. Tied down for years with a mortgage over his head, he has skimmed and saved to meet payments on interest and principal. His farm needs drainage, but he has never tilled because he thinks he can't afford it. He has the New England prejudice against debt.

Neither has he kept up with his farming methods. Only recently has he built a silo, although he has always had cattle. He couldn't afford that, he thought. His orchard, potentially one of the best small ones in this section, has succumbed to insects, because he thought he was too poor to buy a power sprayer and, furthermore, couldn't afford the labor expense of spraying. He has made only a mere living for his family because he was afraid to borrow working capital. The old bugaboo of debt has scared him away every time.

With the judicious use of a few thousand dollars, some years even a few hundred dollars, Johnson could have doubled his income and to-day be prosperous. Instead

Bay Port Folks as I Know Them—And I Know You Know Them Too

By John Williamson

Illustration by J. E. Allen

FOR twenty years Dick Larnard has been telling an infernal lie about a dog he once had that lost her pups. He says she went out into the woods and stole a family of young wild cats, which she brought home and reared.

Being brought up on puppies' natural food, he maintains that the cats developed canine traits—made excellent watchdogs or, rather, cats, he says, only they would yowl and spit at a stranger instead of barking, and would scratch the cows instead of nipping their heels.

Dick has come to believe this preposterous thing. You contradict him, and he will swell up with the indignation of a deacon accused of dropping buttons into the Sunday collection. Moreover, a good many canny-minded Bay Port folks will shake their heads when you dispute the story and remark that they've "heard of stranger things."

The human mind is like that. After a person has heard a thing a few thousand times, as most farmers have this stuff about the monotony of country life, it wears down his mental resistance. He begins by wondering if there may not be something in it, and probably ends by repeating it for a fact. Man is a natural-born believer anyhow. Nothing less explains his acceptance of a lot of past and present nonsense, like the divine right of kings and the idea that the moon will upset a whole season's work if you don't keep on the right side of it.

Here in Bay Port, I'm glad to say, we have nevertaken much stock in that idea of the country being a social desert. We don't believe that the city is a better place to live and work—that is, not many of us do. A few of our young folks leave us to become doctors, lawyers, and the like, and once in a while an old farmer and his wife move to town. We attach no significance to this, for the number of the former is mighty small compared with those who marry and settle down on their ancestral farms, or strike out for regions of cheap land, there to begin as their parents did before them.

WE HAVE no special effort in Bay Port to infatuate our people with agriculture. We have our local Grange just as many another community has such or a similar organization possessing power to stimulate its social affairs. Good schools and roads, modern homes, motor cars, music, a near-by picture show—we have these too. For the rest, Bay Port is just such a prosperous community of hard-working folks as you may find in many another locality.

If there is any particular reason why we are more free than some other communities from the belief that country life is emotionally sterile, it is that we have never paid much attention to such charges. We are a pretty successful group of farmers, and discontented talk does not commonly appeal much to folks who have the hide of the old wolf of Want nailed up on the barn door and carry a checkbook to prove it. That, no doubt, is the big reason for our satisfaction with what we have; but another reason which I would place right beside it, not beneath, is our neighborliness.

We know each other intimately, visit

back and forth, exchange confidences and advice, borrow and lend, trade work, everything like that, until the curse on the surface of life, which is called conventionality, has been thawed away and we each enter into the real life of real live people. This gives us a keen, human interest in our community—reveals it as an absorbing little world that enlists all our sympathies.

Of course, such deep-down understanding of each other wouldn't be possible if any considerable portion of our community were coming and going every year—renters, I mean. We would lose the fascination of watching many little real-life comedies

folks with their real affairs than sit in a theater seeing people I will never know go through some sham of life that no one ever lived. I keep wondering throughout the show what parts those actors are playing off the stage—parts perhaps more wonderful than the pretense they are going through before my eyes.

But I will never know, so I lose interest in them, while of the real folks around me I may learn everything—may make friends of the strangers, help them a bit, take a little part, sometimes, in the act that the Great Stage Master has called them to. The best thing anywhere is the people.

ton. He is our philosopher and oracle of wisdom, to whom we go for counsel, comfort, and interpretation of all human and Providential affairs. There is nothing on the earth, in the heavens above, or in the waters beneath the earth that can surprise or baffle old Uncle Dave.

He may sometimes answer with extreme caution, but he would give you an opinion as to the sort of latch used on the Pearly Gates, if you should ask him. His sixty-nine years have yielded him a serene and mellow wisdom, amplified by reading everything in type that ever came his way, and by the strenuous experience of reducing 160 acres of wilderness to the homiest-looking farm within ten miles around.

All his toil, plus five years of the Civil War, has put no stoop in Uncle Dave's shoulders. His twinkling blue eyes seem brighter now than they were a quarter of a century ago, when his neat-pointed beard and thick, wavy hair were just beginning to silver.

Uncle Dave is a six-foot dynamo of cheer from which we all draw a blessed portion of encouragement. We do not, however, accept all his philosophy, glad as we are to hear it. He is sometimes too original, and you cannot always be sure whether he is in earnest or having fun with you.

Tom Markham once asked his opinion about making a pond and raising fish. Tom hadn't been doing extra well with his cows, on account of a couple of poor corn crops which made it necessary to buy a lot of feed, and he had read an article somewhere that mentioned profits of \$500 or more an acre from fish ponds.

"Sounds good," Uncle Dave said, stroking his beard and looking as solemn as a treeful of owls. "Sounds very good. And it's got advantages too. No amount of rain would hurt a fish crop, like it has our corn the last two years. No trouble teaching young fish to drink, like a man has with calves. You don't have to get astraddle of 'em, hold their heads down, and ride 'em all over the pond. They take to it natural. Harvesting machinery's cheap too. Just some poles and a few cents' worth of fish-hooks. Probably wouldn't have any trouble getting hands."

Tom isn't especially struck on work, though he isn't lazy. His mind doesn't act with lightning speed, but he began to suspect that Uncle Dave wasn't as serious as he looked, and he tried to change the subject. Uncle Dave went right on.

"You've got 100 acres of land at the foot of the ridge that would make a right good fish pond. At the rate of \$500 an acre, you'd be getting \$50,000 a year. 'Course, the digging would cost something, but you could let the hogs help a lot, by planting artichokes deep. You might even save on harvesting expense by using ducks to catch the fish. Tie short lines to their legs, and every time a fish were hooked it would scare the duck ashore. Just catch the duck, take off the fish, and set it again."

Tom waited to hear no more, nor has he made any venture in fish culture beyond buying a goldfish for Mrs. Markham's last birthday. She says, by the way, that it has the pleasantest disposition of any creature that she ever saw—swims up to the edge of the bowl, [CONTINUED ON PAGE 50]



One of the folks we Bay Porters are especially thankful for is Uncle Dave Dayton. He is our philosopher and oracle of wisdom, to whom we go for counsel, comfort, and interpretation of all human and Providential affairs

and tragedies, such as people pay money to see worked out on the stage. The best of these must have time and a setting of old associations, made subtle by a thousand blended memories.

The years, as they go, throw a romantic glamour over familiar houses and roads, and woods and fields, investing them with the personality of those who have lived and laughed and toiled and wept within and about them.

There is no corner of Bay Port that lacks its treasures of this spiritual sort. It has its legends, its spots invested with awe by forbidden things, its haunted houses (two of them), its people over whose lives secrets hover like the twilight that lends odd lines to familiar objects. It has had its great loves and great hates, its drab lives suddenly flaring out into deeds of which we never thought them capable.

The unexpected happens here as it does in the great cities. Sacrifice and greed, joy and sorrow, envy and charity, all the human emotions, and some not so human, play on Bay Port heartstrings as they do on those in New York or London or Hong-kong. And the result is all the charm, surprise, and bewilderment that life is anywhere when we peer deeply enough into it.

As I said, we could not see some things so clearly if we did not know each other so well; but, at that, I cannot imagine life being monotonous or bare anywhere. The newcomers of any neighborhood bring with them new ideas and practices, and their full human share of life's intricate drama of joy and pain.

Personally, I would rather watch these

Bay Port has rich lands and many thousands of dollars' value in buildings, stock, farm equipment, and money, but its real wealth is its folks—its plain, busy men and women and children who comprise that live, pulsing, intangible thing that we call a neighborhood.

Who can define what so many name "community spirit"? It is your achievement and influence plus mine, plus those of a half-hundred or more others, until a spiritual atmosphere is created, as plainly to be felt as sunshine or frost. It penetrates our homes, our thoughts, our very lives, uplifting or depressing us accordingly as it is vigorous or inert.

I MAINTAIN that each person's contribution to this marvel is at least as important as the corn he grows or the preserves she cans, for it concerns the mental and spiritual nourishment of all. The social productiveness of a man or woman, if I may put it that way, has an enormous lot to do with land values and the drift to town. How often have we heard farmers say when asked what their farms were priced at: "Don't care to sell. We've got good neighbors here, and don't want to move."

There are good neighbors everywhere if you get acquainted with the folks around you. Bay Port is rich in neighborliness, but it wouldn't be had we not cultivated the social value of each other. Once you get fairly started at that fascinating work, there will be no bareness or monotony in your mental outlook.

One of the folks we Bay Porters are especially thankful for is Uncle Dave Day-

There's a Way to Make Alfalfa Feel at Home on Your Farm

By L. E. Call

Corresponding Editor Northern Crops and Soils and Agronomist Kansas State Agricultural College

ALFAFA is a difficult crop to grow. There have been more failures with it than with any other crop commonly grown in America. A farmer in central Kansas who has been growing alfalfa successfully for thirty years said that it took him ten years to produce his first successful crop. Now he seldom fails. This is the experience of many growers. They fail until they learn the conditions that alfalfa must have for successful growth, and create these conditions. Then they succeed.

What are these conditions? The most important are the following: First, a fertile soil, well drained, well supplied with lime, of the proper texture, and one that contains the bacteria that assist alfalfa in securing nitrogen from the air; second, a seed bed prepared for the crop long enough in advance so that at the time of seeding plant food will have been liberated in large amounts, weeds killed, moisture stored, and the soil thoroughly compacted into a firm condition; third, good seed of the best variety, sown at the right time; fourth, judgment in caring for and harvesting the crop; fifth, the use of sufficient manure and commercial fertilizer on old stands to keep the plants in a healthy, vigorous condition.

There is no longer any doubt about the adaptation of alfalfa to conditions throughout the United States. I have found it growing vigorously on the glacial hills of Wisconsin, on the so-called abandoned farms of New England, on the black soils of the corn belt, on the rolling prairies of the Plain States, and in the irrigated valleys of the Rocky Mountains and Pacific Coast. It was as happy in New England as in Kansas, but the New Englanders had made it feel at home by providing it with home comforts.

When once understood, alfalfa is easily produced, and the large profits that may be secured from it make it well worth while to study its requirements. Its high feeding value and ability to produce large yields are well-known facts. For feeding livestock it replaces corn as king. It is rich in protein, the muscle-building constituent of feed, and is therefore just the thing to use in a ration with corn, because corn has a relatively low protein content.

There is no hay that surpasses it. Timothy, the standby of our fathers, is a poor competitor of alfalfa. At the Illinois Experiment Station, in a feeding test with dairy cows, alfalfa hay produced 834 pounds more milk to the ton of hay than timothy when fed in equal quantities in a ration with mixed grain and corn stover.

In another test at the same station, its feeding value was equal to bran when fed in a ration composed of clover hay, corn silage, and cornmeal.

Hay is only one of the forms in which alfalfa can be used. It has few if any equals as a pasture for hogs as a soiling crop for all kinds of livestock. It is not only an excellent feed, but also helps to keep the animal in vigorous health.

ALFAFA is so valuable that any reasonable expense is justified in preparing land for it. Care in the selection of soil for the crop will, however, save expense. Many people make the fatal mistake of expecting alfalfa to grow on soils that will grow no other crop profitably. Do not expect alfalfa to grow under such conditions. It is more exacting in soil demands than most other crops, because of its large plant-food requirements and deep rooting habits.

Deep, open, loamy soils are best for alfalfa. Choose a soil of this kind if possible. If you do not have one, don't give up the crop, because there is plenty of evidence to show that it can be grown on almost any soil, from gravelly loams to muck or heavy clays, if the crop is made to feel at home. This may be done by providing drainage, adding organic matter, correcting acidity, or by supplying needed plant food as the soil may require.

Nothing is more essential than good drainage. There is an old saying among successful alfalfa growers that the crop will not stand wet feet—in other words, it will not send its roots into soil saturated with water. If sown on soil that is poorly

drained it soon dies.

Alfalfa is never happy until it can send its roots deep into the soil. Hardpan must be broken up or, if possible, avoided altogether. Soils with heavy clay subsoils are not as satisfactory as those that have subsoils that are more open, into which alfalfa can send its roots with greater ease.

Heavy subsoils, especially when poorly drained, usually become more mellow after drainage, and alfalfa should never be sown on them until drainage is provided.

Soils for alfalfa should also contain an abundant supply of organic matter that will easily decompose. Organic matter helps to supply plant food by aiding bacterial action; it makes the soil more mellow and, together with good drainage, prevents heaving in the spring, and assists in securing better inoculation.

Soils that are deficient in organic matter should, if possible, be manured liberally six months or a year before the crop is sown. If sufficient manure is not available, the next best plan is to raise and plow under a crop of sweet clover, cowpeas, or some other green manuring crop before trying to grow alfalfa.

Fully 75 per cent of the soils east of the Mississippi River must be limed before alfalfa can be satisfactorily grown. In the western half of the country, where the rainfall is lighter, the soils are more abundantly supplied with lime, and consequently less frequently need liming for alfalfa.

Where lime is needed, it must be supplied. In the case of soils that are sour because of lack of drainage, liming alone will not be sufficient. The soil must be drained and put into good physical condition, so that lime can properly sweeten it. Soils that grow good crops of red clover may not need lime for alfalfa, but when there has been some difficulty in securing a stand, or when clover has not done well, liming will usually be necessary. If there is any doubt, the



"What done make dis dolly so heavy-like?"



"Ef yer ain't bustin' a hole right fru yer skin!"



"Yer ain't bin starvin' yerself, is yer?"



"Don't nebber let me ketch yer stuffin' yerself wif dat kinder breakfus' food agin!"

soil should be tested for acidity. The county agricultural agent will make the test for you.

Where liming is necessary, choose the kind of lime that is the most economical. Ask the county agent to help you figure the value of the different kinds of lime under your conditions. Usually ground limestone will be cheapest, but other forms of lime will give equally good results.

The amount to apply will vary with the soil and the kind of lime used. Two tons of ground limestone an acre will usually be sufficient, but occasionally applications of twice this amount will be needed for best results. The lime may be applied at any time, but it is best to apply it at least a year before sowing alfalfa.

Alfalfa requires for its proper development certain species of bacteria which live upon its roots and gather nitrogen for it from the air. If these bacteria are not present when the alfalfa is sown, the crop must secure its entire supply of nitrogen from the soil. Usually there is not sufficient available nitrogen in the soil to insure a thrifty growth, and the alfalfa, after growing a few inches high, turns yellow, and finally dies.

This can be prevented by artificial inoculation. In 90 per cent of the cases where alfalfa is sowed for the first time in the eastern half of the United States, it will need inoculation by some artificial means. In the western half of the United States alfalfa has been grown longer, the alfalfa bacteria are more widely distributed, and artificial inoculation is not so often necessary.

The surest and usually the best method of artificially inoculating alfalfa is to secure soil from an old, well-inoculated, healthy, alfalfa field. Soil taken from a place where sweet clover is growing can also be used, but it is usually less satisfactory because it often contains weed seed.

The soil should not be exposed un-

necessarily to sunlight or allowed to dry out, as this will kill many of the bacteria. Inoculation may be effected by broadcasting and harrowing in 200 to 500 pounds an acre of the inoculated soil before seeding, or another good way is to mix a gallon or two of fresh soil with each bushel of alfalfa seed just before sowing. If the seed is first moistened with a weak solution of glue or sirup, and then thoroughly mixed with the soil, it will insure each seed being covered with a thin covering of soil.

One Ohio alfalfa grower told me that he made a practice of sowing a few pounds of alfalfa seed each spring with his red clover, and in this way he soon had his entire farm inoculated. This is a good method if started far enough in advance of seeding alfalfa.

ALFAFA may be sown either in the spring or summer. If the weather is favorable and the soil in good condition, it may be sown any time, provided it makes sufficient growth to pass the winter successfully.

A few farmers on good soil in the corn belt have succeeded in sowing alfalfa with winter wheat or rye in February in the same way they sow red clover. Others who practice spring seeding prefer to sow with a light seeding of oats or barley, used as a nurse crop. Still others prefer to sow in the spring without a nurse crop.

The great objection to spring seeding is weeds. Few people realize how abundant weed seeds are in most soils. It is my opinion that weeds cause more alfalfa failures than any other one thing. The use of a nurse crop to combat weeds is not always successful, and may actually injure the young alfalfa by excessive shading or by exhausting the soil of moisture. When the nurse crop is harvested the young alfalfa is exposed to the scalding summer sun, drought, and a fight with weeds for the rest of the summer.

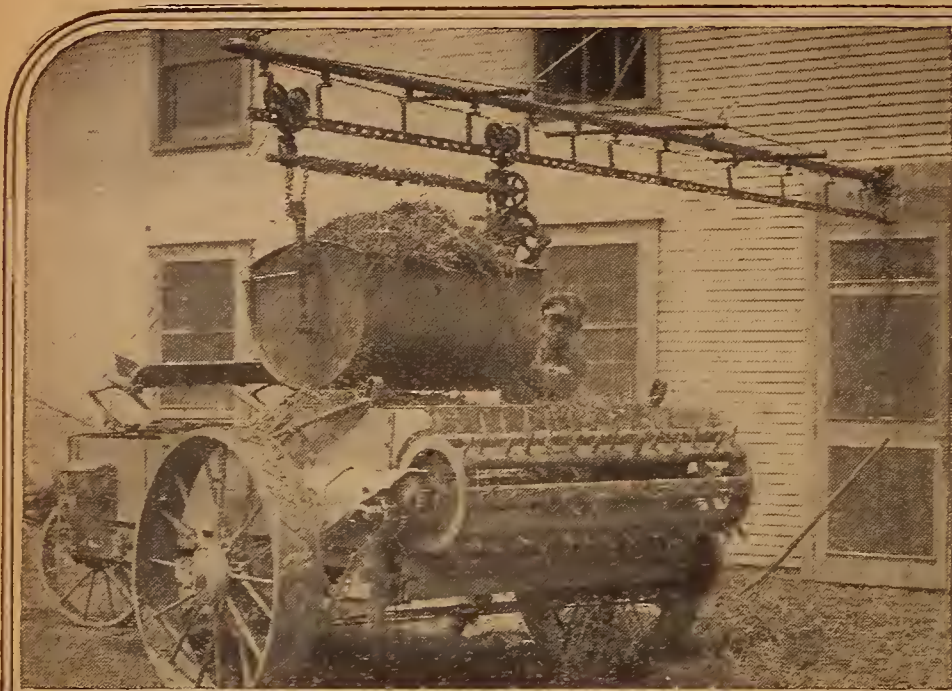
For success with spring seeding it is necessary to have clean ground, a thin nurse crop, and timely distribution of moisture during the summer months. Summer seeding is usually the safest. There is less trouble with weeds. In the South Central States, alfalfa can be sown in August, after a crop of small grain like wheat or oats has been harvested. The plowing should be done as soon as the crop can be removed, so that the soil can be worked down into a fine compact condition. The crop should be sown early enough to make a growth of several inches before winter.

The seed should be sown after, rather than before, a rain. A hard rain shortly after seeding may crust the soil and make it very difficult, or even impossible, for the young plants to force their way to the top of the ground. Many stands of alfalfa have been destroyed in this way. The exact time to seed will depend on the location. In Kansas, Missouri, Kentucky, and Maryland late August is sufficiently early, but in Iowa, northern Illinois, and Ohio the crop must be sown in late July or early August.

In Wisconsin, Michigan, and the New England States it is not often possible to sow alfalfa after harvesting another crop. The season is too short. The most successful growers of alfalfa in these Northern States plow the ground for the crop in the spring, and work it to kill weeds until late May, June, or early July, before seeding. The weedier the ground the longer seeding is delayed.

Common or ordinary alfalfa is the variety most extensively grown throughout the United States. For most of the country, there is no variety superior to it. The variegated strains of alfalfa, such as Grimm and Baltic, which have been developed under the severe climatic conditions of the North Central States, are more hardy.

Grimm alfalfa can be grown where the winters are too severe for common, but where common alfalfa does not winter-kill it usually outyields Grimm. In the Northeastern States many alfalfa growers consider Grimm alfalfa more hardy because its roots are not so easily injured by alternate freezing and thawing in the spring. Plants with taproots like common alfalfa are often killed under these conditions because the roots [CONTINUED ON PAGE 61]



ALITTER carrier so arranged that it can be dumped directly into the spreader, on the farm of F. B. Smith near Terre Haute, Indiana. This is a small point to make, but small points can be important on occasion—as, for instance, in the case of the man who accidentally sits down on a pin. It saves only a little time and trouble, this idea of Mr. Smith's, but it's just that much more time left him for something else.

Good Ideas

WHEN you stop to consider how laboriously crops used to be gathered before we had machinery to help us do it, this picture is a bit wonderful to look at. It is that of a corn picker drawn by a tractor, the wagon beside it being driven by Mrs. Henderson, on the farm of A. L. Henderson at Linden, Indiana.



THIS is a rare and valuable combination of feed, water, and shade, all close together for the poultry. It is easily and simply arranged, if you just happen to think about it when you are getting things fixed up. Often, however, we forget to think, we humans. This scene was snapped on the Purdue farm at Lafayette, Indiana.



DRIFT horses hitched to a gang plow on a good farm in Illinois. In this case

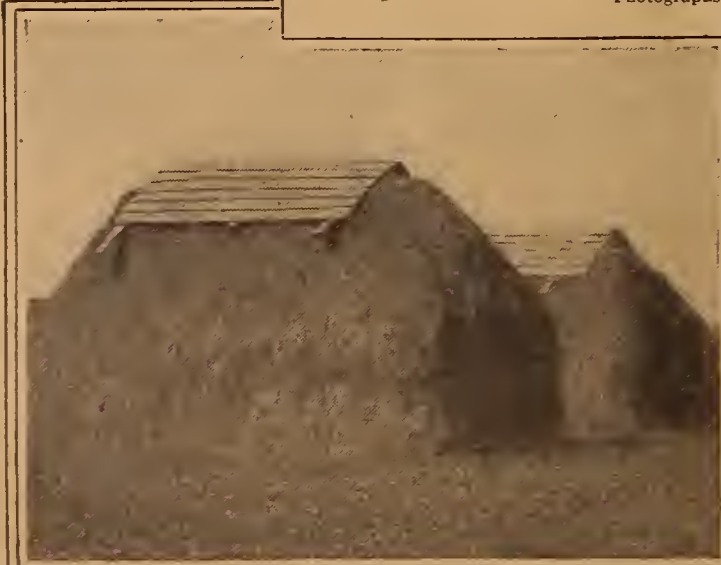
the owner has worked out a scheme to save money on them. Maybe you know it; but, anyhow, here it is: He uses several draft mares on this work, and he says their foals more than pay the keep of the drafters.

IT OFTEN happens that a poorly built, or even a fairly well-built, stack will rot in the center from the top seepage of rain water. The owner of these stacks took no chances, but knocked together these simple and effective shelters which he could throw over the top and rest assured that his hay wouldn't rot.

HERE is a picture from an Iowa farmer who put in a bit of thought on his crop before he planted it. He knew what he wanted to do, and why he was doing it. This is rape forage for pigs, planted in rows so it can be plowed to keep the weeds checked and conserve moisture. Note also how the pigs work along the rows and avoid tramping down the rape.

Photographs from J. C. Allen

HERE is a little scheme that was worked out on the Daisy Hill Dairy Farm near Cleveland to make life attractive thereon for the men who help with the work. Several of these simple, attractive little tenant houses were put up, and from all reports they have certainly proved to be worth their weight in gold as help keepers.



What My County Agent Has Done to Help Me Make More Money

Prize Contest Letters by Readers of Farm and Fireside

First Prize

Winner: George Brower
Rock Valley Farm, Hamilton, Michigan

IT IS a great satisfaction to me to note that FARM AND FIRESIDE takes an interest in the county agent and his work. It often occurs to me that the county agent is frequently slighted by farmers because they do not thoroughly understand what he is doing for them, and what he can do to make their work more pleasant and profitable.

The trouble with a great number of men is that they are too easily satisfied with their attainments and never stop to consider that there is place for improvement. This is no time for loose-headed farming. There is improvement in every line of business, and everything moves quicker and better, and it is up to the farmer, if he wishes to keep up to the times, to have more system on the farm. I do not mean a daily routine of doing things, but teamwork and co-operation.

Farming is the greatest business in the world, and to be a successful farmer one cannot turn his entire attention to his own little plot of ground and shut his eyes to the outside world. He must know how to produce and how to market it, and it is an unfortunate farmer who thinks he can do this in the most profitable way, solely by means of his own intellect. It is therefore essential for him to share the ideas of other men, and to profit by their experiences.

FARM AND FIRESIDE is a farm paper that gives every man the finest opportunity to get this help, and should be in every farm home. I'm mighty glad that this paper gives the farmer a chance to participate in this work, and to tell the next man, right from the shoulder, the little "tricks" of the game which he has found from his own experience. FARM AND FIRESIDE is worthy of my highest praise, and I do not believe that there is a farm paper published where the editors are as closely affiliated with the farmers as they are in this one.

I have found from my own experience that the county agent is not a man looking for a soft job, assuming that he knows more about farming than the man on the farm. No man knows everything about farming, but everyone knows something; if each contributes something we'll all know more. The county agent is our servant if we make him such, and the help we are going to derive from his advice and assistance depends on our willingness to accept it.

Mr. Alfred Bentall, Allegan County agent, has rendered me and the rest of the county a great service, in the line of producing better and bigger crops, and inspiring us to pull together and to try new methods. Some few years ago I heard of a new kind of wheat, produced by the Michigan Agricultural College, and felt inclined to try it. Our county agent favored the move, and encouraged several farmers to grow it, and to keep it free from impurities as near as possible. The new brand, Red Rock wheat, proved to be the best kind of wheat ever tried in this vicinity. It was the heaviest yielder, made the best straw, and was the least apt to lodge. Of course, in a short time this brand spread throughout the entire State, and soon throughout the States. Useless to say, it meant more profit, better wheat, and greater production.

Some time later, Mr. Bentall urged me to try marl on my farm as a fertilizer and to soften the soil. While grading a road and digging a ditch along the side through a hill, I found a bed of marl about four feet below the surface. I sent a sample of this to the state experiment station, and found it to be about 45 per cent lime. It is a wonder what marl will do, with even such a small percentage of lime. With the aid of the county agent several farms have been found in this vicinity that have great beds of marl containing over 90 per cent lime. Many a man is rich and doesn't know it, because he does not farm with his eyes open. Piles of wealth are laid up in this old world of ours if we are only awake to find them. I confess my ignorance in the line of farming, but it is a very satisfying thing to know that I have the county agent and the farm papers to help me.

The poultry business is another phase of

the farm problem which requires a great deal of attention. I never knew that there were slackers among chickens until the county agent came over and showed me how to detect them. Since that day I have made more money from my chickens than ever before.

It is not necessary to go into detail and tell you of more incidents in which the county agent has helped me, but what he has done for me he is willing to do for all, and where one gets the benefit all are going to share it. He has shown me the better



This is the county agent who helped Mr. Hall. He is A. L. Shepherd, farm bureau manager of Oswego, County, New York. The picture was taken in his office as he was dictating to his secretary.

way in farming, and inspired me to raise better crops. I am glad that I have this opportunity to say something in defense of the county agent, because I feel that his work has suffered unjust criticism many a time. It is a pity that some men—men like myself—should ignore such opportunities, and deliberately let them pass beyond their reach. It is all for the asking. Unless we are interested in our work, no one else will be. The county agent is one of my best friends and an invaluable source of help. He is continually striving to solve the problems that face us, and I know that when I am in need of advice or help I can get it from him.

Second Prize

Winner: Samuel Hall
R. F. D. 5, Oswego, New York

LIKE a great many farmers who learned what little they know by hard work and bitter failures, I had no use for what I called book farmers, such as county agent and experiment station advice.

A few years ago there was a great shortage of seed potatoes in this State. Through the county agent this county obtained a carload of fine Maine potatoes. A trip to the farm-bureau office was necessary to order seed. I came home and told my wife that I believed after all that young fellow knew his business, and was interested in the farm and the farmer.

She replied that he had certainly helped Oswego County farmers out this time. I think she said, "I told you so," up her sleeve, for she had always maintained that the State was back of the county agents, and there must be some good for those who would avail themselves of the help.

I continued to scoff until, after I had bought the seed potatoes, I made it a point to walk over to the office occasionally from the feed store across the street. The agent seemed always glad to see me or any of the farmers who dropped in. He was always interested in what we were doing and how

we were doing it, from hauling out manure to disposing of our milk.

One day he showed us a wonderful chart that should be shown in all rural schools. Plant food, soil conditions, and the requirements of different plants were made plain as A B C. One day he asked me what kind of silage corn I grew and how I grew it.

Now, I admit that, while I had always put lots of hard work on my corn, I had never raised very many banner crops. The agent said:

"If you will plant the kind of corn I recommend, and as I advise, I think you will feel well repaid."

I followed directions and had my silo full and one acre of ensilage left over on the ground, when I had expected to just fill my silo. This year I filled my silo, and had 100 bushels of husked corn and the fodder from which it was husked left over.

Another time he told me of a dressing for old meadows. Applied, it yielded me double the hay I would have had without it. At present prices three extra tons of hay are worth something. I am now breaking up my pasture an acre at a time, and, after cultivating two seasons, am seeding with a mixture recommended by my county agent. I expect to have a better pasture than I have ever had before.

In fact, I believe, instead of my old prejudice I have acquired the habit of referring to my county agent for frequent consultation and advice. I have a small farm of 36 acres, thirteen of which are in orchard, and for the last several years I have raised feed enough, and almost grain enough, for nine head of cattle and three horses.

I am going to keep on going to my county agent for advice and suggestions. The farmer's problems are his, and there is no fee for every question asked or prescription given.

Third Prize

Winner: George T. Beach
Las Vegas, Nevada

TO TELL in 500 words what our county agent has done for me seems as bold an undertaking as that of my Japanese classmate in college who took "Chinese Civilization" for the title of a 500-word theme.

To begin with, I came here a greenhorn from the East. Men like me often "plant" their all in costly mistakes in this Western country. Looking back, I realize many mistakes he has helped me avoid, incidentally saving me from ruin.

Thus, irrigation is the Waterloo of hundreds out here. I planned a well like those already here, with casing only to the first layer of rock. Such was the "digger's" advice. But the agent advised me strongly otherwise. I shudder to think how nearly I acted against his counsel. My well is now everything an artesian well should be.



A county agent inspecting alfalfa in October, just prior to the cutting of the fourth crop for that season—any one of which is worth as much as the average corn or wheat crop

Those of the type I planned to dig are sending more water outside the casing than through it, ruining both well and land.

In putting in pipe lines I had no idea of the capacity necessary for my land. He furnished the data. My system is neither too large nor too small—a distinct economy for me.

Again, I supposed the more water I used

the better. Along came the agent saying that I was using too much and would water-log my land. Though skeptical, I followed his advice and saved my land. Many who started before we had an agent have water-logged land that will not become normal for years, if ever.

Alfalfa thrives here, and I planned to grow it; but he advised me that trees were better, and already I am prospering beyond my alfalfa neighbors.

There are dozens of ways in which he is serving this part of the State; among them are: Pruning demonstrations; introduction of black locusts and catalpas to supplant cottonwoods; organization of a farmers' union, whereby we save in buying and selling enough to make the difference between profit and loss; the demonstration that almonds, peaches, pears, grapes, Pima cotton, figs, melons, cantaloupes, onions, and all kinds of vegetables will grow commercially with profit over these valleys where a few years was a God-forsaken desert that men said would always remain so.

What he has done for me he has done for others. Some have refused counsel, and have paid for their disregard. This only emphasizes my indebtedness to him. The rich man who can afford to experiment may be able to dispense with the agent, but the man staking all in one venture needs advice, because one costly mistake may put him out of business.

Fourth Prize

Winner: John C. Matheny
Grower of Boone County White Seed Corn
Miami, Missouri

THE following is one way in which my county agent saved me money:

Several years ago our farm was beginning to be cut up quite a bit with small ditches and gullies. We did not know what to do, but we knew that we were losing corn, rows at a time, every big rain. Further than that, we knew that we were losing fertility, and at that the best fertility in our soil. We were getting ditches which were hard to cultivate over, and we were having surface soil washed away by what is called sheet washing.

At that time Robert J. Howat was our county agent. Through some sort of arrangement "Bob" got an expert along the soil erosion line into our county. They started some terracing demonstrations by establishing a set of Mangum falling terraces on some Saline County farms.

These terraces were low-lying ridges running around the hills in such a way that they conducted the water slowly to an outlet. They were laid off with a level or a surveyor's instrument, with a fall of about one inch to the rod. The terraces were constructed with a plow and a simple V-shaped drag, which was driven along the plowed ridge to push the dirt toward the center of the terrace. They were built about every four to six vertical feet, which made the actual distance between them depend upon the degree of slope.

These terraces were very successful, and Bob made demonstration projects of them. He recommended their use and helped farmers to lay them off. We liked them so well that we had him visit our farm. That was about four years ago. With his help we built several terraces. The result was that when big rains came the water was slowly conducted to the outlet, no corn was washed up, no ditches made, and no corn water-killed. At times during rains we could have taken a canoe and floated easily the full length.

We have been so well pleased with the result that we have installed others, and are proud of them. If it were not for limited space I would like to write more about this project, which is only one of the many which our county agent has made pay for us tenfold. I can say that in this one thing he has saved us many bushels of corn and hundreds of dollars in the work of our farm.



Photo by Clarence A. Purchase

"And through the succulent orchard grass trod ewes and lambs—
A symphony of pink and white and green"

It Hasn't Got Anybody Anything at All

By Bruce Barton

SOME years ago a great merchant called one of his employees into his office, gave him a month's salary, and discharged him. "I like you personally, Peters," he said, "but I cannot afford to have a man around me who takes so much trouble to be always right.

"Every time a good thing happens in your department you are quick to take the credit; every time a mistake is made you have ten perfectly good reasons why the fault belongs to someone else.

"I want men who are so busy accomplishing results that they have no time at all to think about dodging their share of the blame for mistakes. I'm tired of watching you 'pass the buck.'"

It's very deep-rooted—that habit of dodging responsibility, of "passing the buck," as the common phrase goes. It seems to have started in the world on about the second day, according to the best authority.

Adam ate an apple from a tree whose fruit had been forbidden, and God straightway summoned him to account.

Did he stand up and take his punishment like a man? He did not.

"The woman thou gavest me," he whined, and sought to pin the responsibility on the trembling shoulders of poor Eve.

A pretty poor example for the father of us all to leave us; he was the first of the race, and he started us off all wrong.

A few hundred or thousand years later, Moses undertook to do a great work for the members of his race, and chose Aaron as his chief associate.

In the very hour when Moses was on the mountain receiving the Commandments, Aaron, his friend, gathered the children of Israel together and made a golden calf for them to worship.

"Don't blame me," he cried, when Moses' anger flamed against

him. "It really wasn't my fault. I gathered up the gold they brought me, and *I cast it into the fire and there came out this calf.*"

It wasn't Adam's fault; Eve was to blame. Aaron had no responsibility; the fire was the real culprit. So from the very beginning men have sought to put the burden of their mistakes on someone else.

That habit was never more in evidence in the world than at the present hour.

Who's to blame for the high cost of living? Not I, cries the farmer. Not I, cries the laborer. Not I, cries the capitalist.

Who is responsible for our social unrest, our decreased production, and our wide-spread discontent?

Each of us has his own culprit to nominate, and no man nominates himself.

Suppose for a month or two we were to quit blaming each other and turn our undivided attention to our own part in the present social situation.

Suppose each one of us were to make up his mind that the only solution of the world's troubles will come not through legislation but through increased production, more work, less talk, and greater thrift.

We farmers need this old-fashioned preaching less than many other folks, but even we have our share of need.

Let us set an example to the rest of the nation of the only way in which relief from our troubles is going to come. Let us put our own houses in order, and cease to fret ourselves because of evil-doers.

For thousands and thousands of years men have spent a big share of their days in the grand old pastime of "passing the buck."

And it really hasn't got anybody anything at all.

How Co-operation Saved Us Our Crops and Our Good Name

By John B. Wallace

IT IS mighty hard to get any of us southern Californians to admit that there is ever anything wrong with our climate; for climate is what made southern California, with the assistance of irrigating water, which converted a desert of cactus and sagebrush into one of the garden spots of the world.

But I am compelled to confess that occasionally the frost king slips by our barrage of sunshine and lays his chill hand upon our oranges and lemons. This does not happen every year, but with a frequency that would take the profit out of orange-growing if the growers had not devised means for protection.

That you may more fully understand the problem we were up against, perhaps a brief history of the citrus industry in California might not be amiss. The orange tree is not a native in this State. It was imported here some forty years ago.

The climate of southern California is semi-tropical, with the accent on the semi. The original orange trees came from a tropical country. For forty years we have been trying to get them acclimated.

As I have previously intimated, southern California was—or at least the greater part of it was—a desert! It still has the great variation of temperature peculiar to the desert. You go around in your shirt sleeves during the middle of the day. At night an overcoat is welcome. A variation of 30 degrees between midday and midnight is not uncommon.

To damage oranges the temperature must drop below 28 degrees. It can even go lower for a brief period without material harm, but any sustained temperature below 28 will ruin the keeping qualities of an orange. Lemons are even more delicate.

There are only two months in the year when there is danger of the thermometer falling to the point that spells disaster to the fruit growers—December and January.

In the early days of the orange-growing industry little attention was paid to saving the fruit. The grower put his trust in Providence, and let it go at that. He likewise had "an ace in the hole." If his fruit froze, he sold it, anyhow, to speculators who unloaded it on an unsuspecting public.

Do you remember, reader, buying big, fine-looking California oranges in the past? When you peeled and bit into them you found a pith like a pumpkin, with about as much flavor as a stick of cordwood. What you got hold of was a frosted orange. Later on I will explain how we growers now protect our customers.

IT WAS not until 1913, when a desert wind swept across the mountains from the northwest and settled a cold blanket of air over the citrus belt, freezing nearly every orange and ruining about half the growers, that we woke up to the fact that something must be done. Smudging had been resorted to previous to that, but only in a half-hearted way. Most of the growers who smudged used open pots, which the wind blew out as fast as they were lighted. In 1919, with a crop valued at more than sixty million dollars and a temperature that went as low if not lower than the minimum of 1913, we saved better than 90 per cent of our fruit by the use of orchard heaters. If you can save \$10 by spending \$6, that's good business every time.

The use of the orchard heater has not only saved hundreds of our growers from bankruptcy, but it has also put the citrus industry on a sound basis. It has cost us thousands of dollars, but it has saved us millions.

Our success in combating Jack Frost is due, in my mind, to co-operation.

I am a crank on co-operation. I freely admit it. I have seen its application convert an uncertain, struggling industry, an industry almost purely speculative and with its products in the hands of speculators, into a business as sound as a national bank. If you belonged to an organization that harvested and marketed your products at cost, and brought you the top market price, would you not be an enthusiast?

And would you not also be somewhat

can readily see what that would have meant to the grower if he had not had his heaters. Fifteen degrees would have frozen every orange in his grove and seriously damaged his trees.

In fighting the frost peril we have the advantage of two co-operative institutions. One is the Growers' Fruit Protective Association, an organization supported by the growers, whose function is to warn its members when the temperature approaches

by the operator that the thermometer is near the danger point.

You hastily dress and hie forth for the grove where your thermometer is hung.

A glance at this is not reassuring, and back to the barn you go to prepare the torches with which you light your heaters. These usually consist of a can with a long snout similar to the oil cans you have seen engineers use on the railroads. These are filled with gasoline or distillate and a wick thrust into the end of the spout.

When the thermometer reaches 27 degrees you begin lighting your heaters. These heaters are of various types, varying from open pots to the latest improved type, which are practically oil stoves. The kind most generally in use at the present time is a round galvanized iron pot with a long stack. They hold five gallons of oil, and when full will burn for four or five hours.

One man can usually take care of 10 acres. At first only alternate heaters are lighted, but if the temperature continues to drop, all of them are fired. Frost is rather an uncertain thing. In many orchards there are certain portions that seem to be immune. I have had a streak in my own orchards where the fruit would be frosted for several rows, leaving the remainder of the trees uninjured. This is due somewhat to the contour of the ground and to the air currents. There is in the case of the larger trees a difference of from three to five degrees between the top and bottom of the tree. I have often found frosted fruit on the north side of a tree, at the bottom, and the fruit at the top untouched.

By the time you have all your heaters going you are no longer a fit subject for respectable society. The soot from the oil has blackened your face until you would make a coal heaver look like an albino, your fingers are frostbitten and, to add to your discomfort, you are sopping wet, as the cover crop in the orchards is usually waist high at this season of the year.

By the time that dawn has begun to pale your fires, you are ready to call it a day's work, but unless you are blessed with an abundance of help there is no rest for you yet. A hot breakfast tones you up somewhat, and you proceed to the barn and get out the mules. The morning is spent hauling oil and refilling your pots for the next night. If you have a large orchard it is usually evening before you can resume your interrupted slumbers.

Notwithstanding the almost universal firing last winter, there was still a small portion of the crop damaged by frost. This was in extremely low spots, and in orchards where the owners neglected to fire up in time.

As soon as it was realized that some fruit was injured, the Exchange began a campaign to protect the consumer. This was not in any particular spirit of altruism: it was hard-headed business. The growers well knew that for every penny they received from the sale of frozen fruit they would reap a dollar's worth of damage to their reputation. They had labored too long to build up a reputation to sacrifice it for a small present gain.

The packing houses closed down for ten days. No fruit was picked during that time. This was to give the frosted fruit an opportunity to dry out so it could be segregated from the good.

The damage done to an orange or lemon by cold is through the breaking down of the cells in the fruit. When the cell structure is destroyed the juice escapes and dries out, leaving nothing but dry pulp. In a grove that has been touched by frost many times upon the same tree there will be undamaged fruit, fruit partially frosted and fruit that is [CONTINUED ON PAGE 32]



This new device, fathered by the California Fruit Growers' Exchange, tests oranges by their weight. The inferior fruit rises to the surface in the tank, the medium quality sinks part of the way down, and the good oranges go to the bottom. This machine is widely used in old American orange-growing regions

An Example of How Big Things Come From Watching Little Things

"SO, THAT they may be certain their customers get nothing but good fruit, the growers use a water separator which culls out all the frozen and partially frozen oranges.

"This machine was invented by Frank Chase of Riverside, California, and perfected by George D. Parker of the same city. Mr. Chase, who is himself a fruit grower, got the idea in 1913, when, in dumping some frozen oranges into an irrigating canal, he noticed that the fruit most severely damaged came to the surface first."

THE EDITOR.

prejudiced in favor of an organization that purchased all your farm supplies at wholesale for you, an organization that lifted all your worries from your shoulders and left you with nothing to do but cultivate the farm and raise your crops? That is what the California Fruit Growers' Exchange has done for me. If co-operation has failed with you, it was the method, not the principle, that was wrong.

Through the same organization that built up the marketing end of our industry, that built up the purchasing department, that built up our fumigation company, an organization that rids our groves of insect pests at cost, we were able to save our fruit from frost. To furnish really effective protection, nearly every orchard in the danger zone must be equipped with heaters.

It is down in the valleys, where the greater part of the citrus acreage is located, that cold settles. Actual tests made last season by Mr. F. D. Young, an expert from the Government Weather Bureau, show that concerted firing in practically all the orchards in the Pomona Valley, the heart of the citrus-growing district of southern California, raised the general temperature of the valley from six to nine degrees.

If the orchards where the heaters are spaced alternately the temperature was raised as high as fourteen degrees.

Even with such a rise the thermometer stood at 22 in some orchards—fortunately, however, for only a very brief time. You

the danger point. Watchers are posted at various points throughout the district where experience has shown the temperature to fall the lowest.

When the thermometer approaches 28, the warning is given. This is done by telephone, supplemented by a corps of messengers on motorcycles.

The second co-operative organization that helps us to protect our orchards is the Fruit Growers' Supply Company.

The fuel used in the orchard heaters is a low-grade fuel oil, purchased for the growers by the supply company, and stored in large tanks throughout the citrus districts. Each grower purchases a sufficient amount to carry him through the season, leaving most of it in these storage tanks until he needs it. A nominal fee is charged to cover the cost of storage.

LAST season being unusually cold, the growers exhausted their reserve supply long before the danger was past, and the supply company rushed carload after carload of oil to them. Through their remarkably efficient organization and their proximity to the oil fields the company was able to save the situation; otherwise the loss to the growers would have run into millions.

Smudging is a dirty, disagreeable task at best. Imagine yourself aroused from sweet slumber in a warm bed at 1 A. M. by the jangle of your telephone bell. Sleepily taking down the receiver you are informed

What to Take and What to Do When You Go Summer Touring

By Bert Highlands

Superintendent of Schools, Mechanicsburg, Ohio



Bert Highlands himself

IN THE spring a young man's fancy lightly turns to thoughts of love."

This was probably true in the days of Tennyson, but a few years after this young man's fancy has entangled him in the toils of matrimony, he and the partner of his joys

and sorrows turn their fancy to thoughts of nature, and the wanderlust microbe attacks them. Then he and his wife and two to five children pack themselves into the flivver and, surrounded by stacks of suitcases, bedding, and tents, hie themselves to the road, and go, not caring much where, and merely giving themselves over to the enjoyments of the great world out of doors.

And one who has been on the road and become accustomed to noting the various tags on machines wonders sometimes whether the entire population has decided to go at once, and whether anyone has been left at home to look after the stock.

Auto touring has surely become the national sport, and when the unsophisticated happens to see one of these flivvers as it stops for the night, and sees the family and all the children as they unload from the car, he wonders where they kept all the bedding, chairs, stoves, dishes, tents, cameras, etc., that he sees piled about in seeming confusion, and next morning, after the entire mess has been stowed away in the little car, he can only shake his head and say, "It beats my time!"

THIS same bug attacked me a few years ago, and I began to plan for a "trip." The first trip was undertaken with fear and trembling, but it was successful; and since that time I have taken my family every summer some thousands of miles in the little old car, and we are so pleased with the result that I am impelled to pass the experience along to others. In fact, now that the automobile has come to stay, I consider it a duty of every man to take his family and see the country. Travel is a great educator, and no money spent for education brings better or quicker results than travel. And the automobile brings all parts of the United States in easy reach of everyone.

I am sure that hundreds of you readers of this paper are wishing you could do something like this, and to you I can only say that if you want to do it just get ready and go. Your farm will not run away while you are gone; in fact, it will likely enjoy having you away for a while.

Like Columbus' men on the Atlantic Ocean, all sorts of dreadful difficulties will confront you at the start. You will imagine all sort of horrible monsters in the way; you will be afraid every policeman will arrest you; visions of worn-out tires and troublesome carburetors will confront you; you will fear that the people you meet will not be courteous, and that you can find no place to camp. But just remember that, no matter where you go, you will find the people about like the ones at home, and nearly all of them envying you because you have the courage to attempt such a trip. In fact, nearly every time we stopped we were surrounded by people who exclaimed, "Oh, I wish I could do that!"

The first question you ask is, "What shall we take along?" And let me answer right here that you cannot take the whole kitchen with you. Besides, you will not need it. It is surprising how many things we can do without. This is the first lesson. Do not overload your car.

Next you should have two extra casings, plenty of good tubes, and a repair kit for tires. It is best to start with new tires all around. These should be good for several thousand miles. On our last trip the

tires went 3,000 miles without a puncture. You can start with an hour's notice if you like, and hike from here to Maine or California easily and without undue trouble. Garages are located every few miles, and any convenient watering trough makes a fine washtub for your soiled linen. If there are only men in the party, you will need scarcely anything but the car and gas and oil. In fair weather a straw stack makes a good bed, and in rain a shed and a blanket is all you need. If you take your wife and babies with you, the problem is somewhat different, but even that presents little difficulty.

You will need a tent, and one made of silk-aline is light and comparatively inexpensive. For four people 10x12 feet is a very convenient size. I have one of this size and material which weighs 18 pounds. On our first trip we carried one made of 10-ounce duck, and when this was thoroughly wet it weighed nearly 100 pounds. We found this too heavy, and bought silk-aline. This will cost about \$50.

The first year I made a set of tent poles out of one-inch yellow pine. The ridge pole, 12 feet long, was hinged in the middle, and had three upright poles hinged to it so that the whole thing folded in to a package about three inches square and seven feet long. Since that I made poles out of white ash, dressed round, about one inch in diameter and four feet long. I cut pieces of bicycle tubing about eight inches long, and fastened a piece at one end of each pole so that they went together like a fishing pole. This is light and can be stowed away out of sight. You may avoid carrying a ridge pole by having a rope sewed in the ridge of your tent and tying this to your car and to a tree. In this way you will need only two poles to hold up the tent, and these may be joined as I said above.

I think folding cots are necessary. There is a convenient cot made which can be had from any mail-order house. This folds into five inches by three feet, and weighs 14 pounds. One of these for each person is fine, but it is possible for two to sleep on one. One can sleep on the ground in good weather, and this is not bad for a seasoned camper; but the ground is too hard for real comfort, and in wet weather it is not safe. We have slept in two inches of water, on the cots, through a very rainy night, and kept dry and warm.

BBETTER be prepared for cool weather. On our last trip, which covered the last part of June and part of July, we encountered heavy frosts and cold, wet weather. Provide sleeping bags, which may be made out of eight-ounce duck or denim. For each bag get a strip 30 inches wide and 12 feet long. Double this and sew up the sides to make a bag six feet long. Inside of this fasten a good wool blanket sewed in the same way. Woolen pajamas with feet may be provided for use if you meet cold weather. In addition to this a good wool army blanket will be needed, or its equivalent. I advise wool because you get the warmth without carrying so much bedding. These blankets can be folded on the seats of the car and occupy little space. Two woolen blankets for each person should keep you warm in any weather.

All your dishes should be of tin or aluminum. A tin pan, knife, fork, spoon, and tin cup for each person. A light skillet, two or three cook pans, and a water bucket are enough. I made a stove out of a "grad" about two feet long, with four wire legs which push into the ground. I covered this with stovepipe iron, and encased

three sides about six inches from the top with the same grade of iron. Then I cut two small holes in the top, and when this is placed in the ground and a small wood fire built under it it leaves nothing to be desired for that purpose.

You can get a small folding stove which burns solid alcohol, and this can be used in rainy weather, but it does not compare with the wood fire. A slice of ham and some gravy made over this wood fire is equal to any hotel dinner you can buy.

I built a box on the running board of the machine, and another I carry on a trunk rack at the rear. The box on the running board should be made as long as possible to fit well on the side of the machine. It may be about two inches wider than the running board, and should be about 18 inches high. Cover it with a tight lid and fit the joints with lead. Rain will find every crack, so do not leave any.

The cupboard at the rear should be made just the size of the trunk rack, and about 30 inches high. Put two shelves in it, and make two doors at the back. Fasten a rubber curtain at the top, and make it to hang down over the doors, otherwise rain will enter. This can be fastened at the bottom with curtain buttons,

which can be had at any garage and will keep out every drop of water. Make these boxes

out of half-inch cypress, which is very light and quite strong. All your bedding and the tent, etc., can go in the box at the side, and in the cupboard you can carry all your food and cooking utensils, towels, and even some bedding.

Put nothing in the tonneau of the car. You will need all that room. I made a box like a suitcase, about four inches deep, to fit in the bottom of the car under the children's feet, and we carried clothing in it. A suitcase may be hung on the side of the car, and this will be all you need.

Carry your spare tires slung to the bows of the top, inside the machine. They are free from dirt and are handy. Your stove may go under the cushion on the front seat.

"Will the trip make me tired?" Not at all. Possibly the first day you may be tired, but after that you will marvel at how fine you feel, and there will not be the slightest tired feeling at any time. Even the driver is free from it.

"Can I find a good place to camp?" There is never any trouble about this. There is nearly always a schoolhouse to be found, and nearly every rural teacher expects to find campers when she reaches the school. Here water and other conveniences are handy, but if no school ground appears any farmer will gladly allow you to camp in his orchard. We have never been refused yet. Many cities provide camping parks, and even in larger places people will allow you to pitch your tent on the lawn.

"Will people I meet be courteous?" Absolutely. They will be anxious to help you. Two years ago, in the South, we could not stop for dinner along the roadside without having someone stop to ask if we needed help. In Washington, D. C., even the policemen were courteous, and no one was too busy to stop and direct us.

"Will I have machine trouble and consequent delays?" We have been out several times and never but once have we been delayed over an hour. One summer in Maryland I broke a bearing in the crank shaft of my car almost in front of the door of a garage, and the repair man took the engine apart and made the repair in just an hour. The only long delay we ever had was in North Carolina. Here we left the car stand in a hard rain over Saturday

night, and drowned the coil box. This took us about all day before we discovered the trouble, which could have been remedied in thirty minutes. After that we covered the engine when it rained.

"What will it cost?" The cheapness will surprise you. Years ago I sometimes foolishly wished I might see Niagara and Washington, but usually these fool notions were put aside like the child's wish to possess the moon. Now these places are as near to us almost as the next county, and the expense is but a trifle. The first trip we took included Niagara Falls and points in New York and Pennsylvania, Washington, D. C., a total of about 1,300 miles at a cost of \$30. This trip lasted two weeks, and we carried most of our food from home. In that day gasoline was less than 12 cents and bread was four cents a loaf. That day is gone, however.

TWO years ago we drove through Cleveland to Niagara Falls, thence along Lake Ontario to northeastern New York, toured the Adirondacks, and both sides of Lake Champlain, and into Canada to Montreal, thence through Vermont and New Hampshire, seeing the White Mountains, the Stone Face, Mt. Washington, Bretton Woods, and other points, thence to Portland, Maine, and then leisurely down the coast to New York City.

We stopped in Boston, camped one night on Plum Island, about three miles from the main places. Spent some time in New York City, and then back through Pennsylvania and up to Watkins Glen, New York, Pittsburgh, and home. The trip was about 2,500 miles, took about thirty days, and the total expense, including all fees, food, gas, and photographs—in fact, all we paid out—was \$76. This does not include the tires, for they gave us no trouble. The wear on the tires for our car was probably \$35. Our 2,000-mile trip through the South, three years ago, cost us \$102.

The trip through New England is ideal. Here the roads are well-nigh perfect. One can find macadam all the way from Ohio on this trip, until his return, and may include Washington, D. C., as well. The South, however, has mostly poor roads, yet a light car finds practically no difficulty. On that trip we had rain for nine days every day, and finally, in Norfolk, Virginia, we boarded a steamboat for Washington and took the car with us.

My brother-in-law and I, seven people in all, with two cars, are planning a trip to the Pacific Coast. We expect to go first to Colorado, and, after viewing some points there, see the Grand Canyon, Mesa Verde, the Big Trees and Yosemite Park, San Francisco, Crater Lake, Mt. Rainier, Glacier Park, Yellowstone, and home. This will take all summer, and is now entirely feasible.

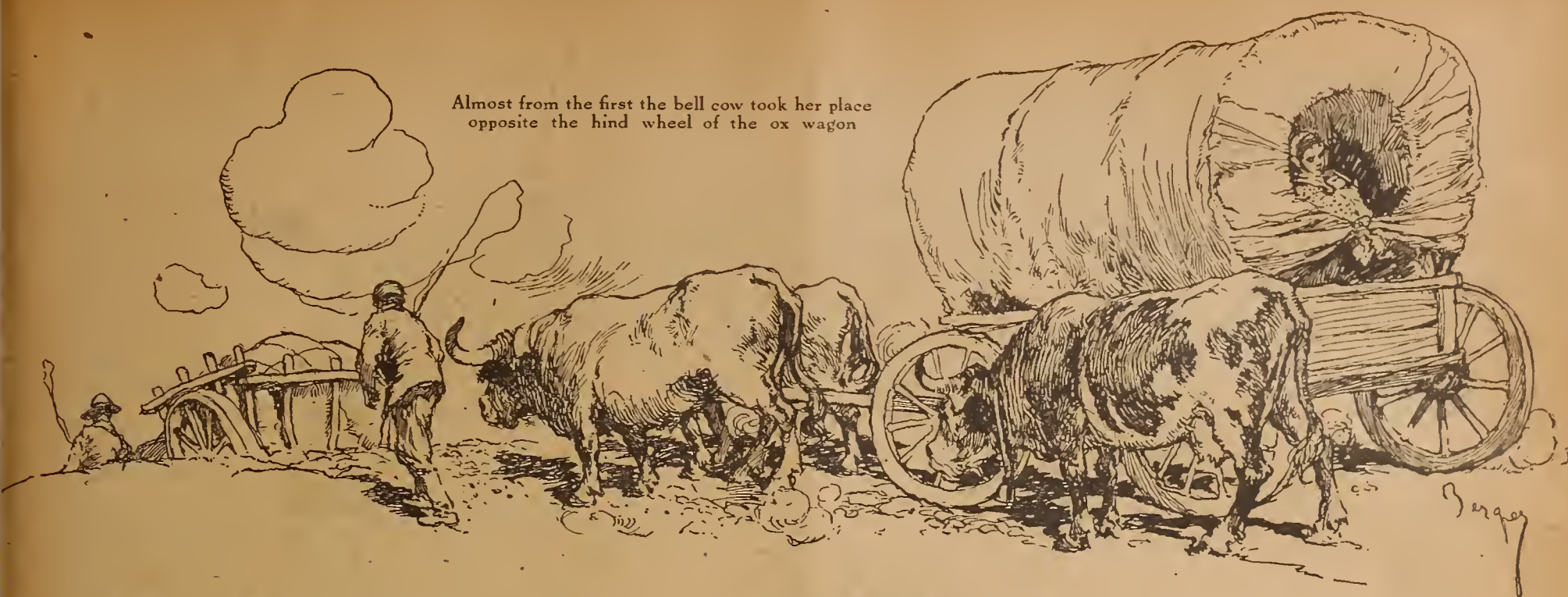
Provide yourself with one of the guide-books now published. This can be had for any section for about \$3, and it makes the road easy to follow. Besides, the book points out the many things you should see and that you would otherwise miss. Directions offered by people you meet are usually confusing and take time. You can count on making an average of 100 miles a day. This gives time to stop at points of interest, but it is better to go slower.

Take your camera. You can live over the trip for years to come, and this is the best part of it. You will also meet many amusing incidents and people.

Try it this summer. You have nothing to fear. Decide where you want to go, get your outfit ready, and start in August. If anything should happen, you can board a train for home, but you will not find that necessary. You will enjoy your trip and come home refreshed. You owe it to yourself and family to take advantage of this opportunity. Touring in this manner is far better than going by rail. You have your car and can visit out-of-the-way places, can go when you want to and stay as long as you please. You will not be a slave to time-tables nor a prey to sharks in the form of guides or taxicabs. See America first.



This is our car and equipment



My Boyhood on a Middle-West Farm in the Days of Long Ago

By A. W. Beale

Illustration by William Berger

NOTE: This is the second instalment of Mr. Beale's personal recollections of his experience as a farmer in Indiana and Iowa during the years 1844 to 1860. Mr. Beale is now seventy-five years old. His story, the last part of which will appear in FARM AND FIRESIDE next month, is filled with kindly philosophy and a keen insight into human nature, which, combined with these personal experiences, make what he has to say mighty interesting reading.—THE EDITOR.

Part Two

I WAS about twelve years of age when Father traded his little farm in Illinois for a much larger quantity of virgin prairie land in Adair County, Iowa, and in the fall of 1856 we commenced our trek for the West.

The journey, as I remember, was uneventful but somewhat wearisome, as we were about three weeks on the way. The first week we made rather slow progress, as there was considerable rain, and the country we were passing through—western Indiana and the State of Illinois—was mainly flat. The rain made the roads muddy and difficult of travel by heavily loaded wagons, of which we had two, one drawn by a span of horses and the other by a yoke of oxen. These wagons Father made himself purposely for this journey, thus showing that he could make wagons as well as farm. The horse team was put in the lead, and set the pace for the oxen; but after the first few days the latter seemed easily to keep pace with the horses.

Some days during the rainy weather we were able to make but a few miles, and I think on one or two we did not travel at all.

Like many families moving to a new country in those days, besides the teams we took with us several cows and some young stock. Almost from the first day the bell cow took her place opposite the left hind wheel of the ox wagon, a place she steadily maintained to the end of the journey, unless crowded out by the exigencies of the road. At the journey's end, a spot on her right side, hub high, was almost denuded of hair, by the constant rubbing against the wagon hub.

I may as well here follow the fortunes of this ox team, so that I need not refer to them again. They were a well-matched pair in size and strength, the nigh one spotted in color, a red and white, and a very gentle and obedient animal. On the other, red predominated.

In putting the yoke on these oxen, it was placed first on the off ox, then the other, from any place in the feed lot, would obediently come under the yoke at call.

We used this team a great deal in our farm work, for they were so obedient and so steady, and almost as fast as horses. The work of yoking and hitching up was so much more easily done than harnessing a span of horses, that Brother and I always

showed a preference for the ox team.

In plowing, after a "land" was marked out by a few rounds, on coming to the end of the furrow they would stop and make the turn of their own accord without a word being said to them. In quitting the work at noon or night the nigh ox would allow us to ride him home, although it was not so easy on account of his broad back and nothing to hold on by. Of course, a boy would love a team like that.

The winters we lived in Iowa were extremely cold, and I want to tell you what the cold weather did to the off ox. At least we always thought it was the cold. One morning, after an exceedingly cold night—oh, it must have been thirty or forty degrees below zero—we noticed this ox had a crook in his tail, a regular pot-hook, just above the bush. Of course, we thought it was frozen, and expected it to come off. But it did not. We called it old Bright's jug handle, and allowed him to keep it.

But this was not all that happened to him that cold winter. After spring had come we noticed a gradual drooping of one of his horns. It drooped and drooped, until the point was below the eye. We expected him to lose the horn, as we had expected him to lose his tail, but it stayed with him. We did not notice that either the tail or the horn occasioned any pain.

Now, what caused these two freakish events? If the horn and the tail were frozen, why did they not come off when they thawed out?

I know this story is hardly within the bounds of credence, but it is true nevertheless. I believe, though, that after some months the kink in the tail did straighten out a little.

WE ARRIVED at our destination in Adair County some time in October, and Father found a good farm for rent on Middle River, a few miles from his own land. This was fortunate, as his land was unbroken, no house, no shelter of any kind, and no time to put up a house before winter would be upon us, indeed, if he had the means of then doing so, or could have found the material, as lumber was a scarce article in that prairie country.

There were about a half-dozen other farms and families in that vicinity, for there was a large body of timber in the angle formed by a creek that entered the river there, and first settlements were always made along streams. Back of these farms the uncultivated, rolling prairie stretched for miles, and was the breeding ground of the pinnated grouse or prairie chicken. In the fall and spring they would come down on to the farms morning and evening in countless numbers to feed in the stubble or the grain. Of frosty mornings they would mount the fences, after feeding, to sun themselves a while, and it was then they were

easily stalked and shot. In the fall of the year the spring hatch, then about full-grown, were more easily approached and killed than the older ones, and were much better eating.

Father had two guns, one a smooth-bore, the other a rifle, both taking a ball the same size, about .45 caliber. The rifle was a heavy gun, weighing fourteen pounds; the other, hardly more than half the weight. The rifle was much the better gun, true to mark for at least two hundred yards.

We boys were now allowed to use these guns, and were becoming pretty good marksmen; but the rifle was so heavy that we always had to find a rest for it, otherwise we could not hold it on the game. This detracted a little from its use, for sometimes a rest was not handy when the game was sighted. We kept the table pretty well supplied with grouse with our guns, though usually we kept a box trap or two standing, and often found a chicken or two in a trap.

Grouse seem averse to taking wing when sitting on the fence sunning themselves, and we often got good shots at them by following behind a wagon and team driven near and parallel with the fence. They do not exhibit much fear of a wagon and team.

Though prairie chickens were so plentiful in those days, they are very scarce now. A correspondent writing from Adair County, quite recently informs me that at this time but a few small flocks are to be found there. In the case of most wild game, settlement drives it away. Grouse seem to require large areas of unsettled prairie in which to breed. As a country settles up, game retires. Prairie chickens, and indeed all game, have many enemies to contend with. They make their nests in tufts of grass, and their eggs and young chicks are the prey of coyotes, skunks, and snakes. The grown birds, being fine eaters, are much hunted by sportsmen. Thus through all of life, from the egg to the strutting cock and nesting hen, there is something to prey upon them. Prairie fires also must be very destructive to their nests and eggs.

In my boyish days, the breech-loader, the automatic, and the pump gun had not appeared. These came afterward, and the "sportsman" followed, or they followed the sportsman, I don't know which way round, but the combination has been death and destruction to the game.

Many of the States, as well as the United States, now have what are called "game laws," the purpose of which is to protect the game by making killing unlawful except for a short time only in each year, but most of these "open seasons" in which game may be lawfully killed are too long, and too much of each kind of game is allowed to each hunter per day.

In one Western State I have in mind, there is a sixty-day open season on grouse, and a hunter is allowed ten per day. A

couple of sportsmen, then, hunting together, can kill twelve hundred for the season. Turn an army of hunters loose in that State each season, as may be, and how long are the grouse going to last?

Notwithstanding game laws, much of our feathered game is still decreasing, or has wholly disappeared. The wild pigeon, or wood pigeon, is an instance. Once so plentiful in Indiana, Michigan, and other States, they have somehow "mysteriously" disappeared, so writers tell us.

WHILE living on this farm on Middle River, one day I was out in the large grove I have spoken of, and was very much surprised to find there a flock of these pigeons. There must have been many thousands of them. That part of Iowa being mainly a prairie country, they must have come from quite a distance, as I had never seen any there before.

I had seen a few of these beautiful birds in Indiana, and knew what they were. I had no gun with me, and did not disturb them, but spent some time in watching and admiring them. The cock birds were surely worthy of admiration, the color on the breast and neck being of a scintillating bronzy brown. They remained in the grove but a few days, and then they were gone, I know not where. They were probably migrating, and had stopped there for a rest.

The next spring after our arrival, we commenced farming in the new country. We put in a varied crop, such as farmers usually put in—corn, wheat, oats, buckwheat, sorghum, etc. It was then I discovered that the winds do blow in Iowa, or did that spring.

In planting, plowing, or what not, the wind was always filling our eyes with dust, whipped up from the loose ground, no difference which way we were going. If facing the wind, the dirt came directly into our eyes and face. If going from the wind the dirt swirled and eddied around in our front, and was, if any difference, worse. We found that in the spring of the year there was almost a constant blow, day after day.

Kansas has been called a State where much wind blows, but it has never been worse in this respect than Iowa in these years. The truth is, winds blow in an open prairie country, and are not confined within state lines. The broad open prairies afforded no obstruction to the sweep of the winds, while in timbered countries their force was broken by the timber, making one think the region less windy. Those who imagine the winds are more subdued now than formerly I think are mistaken.

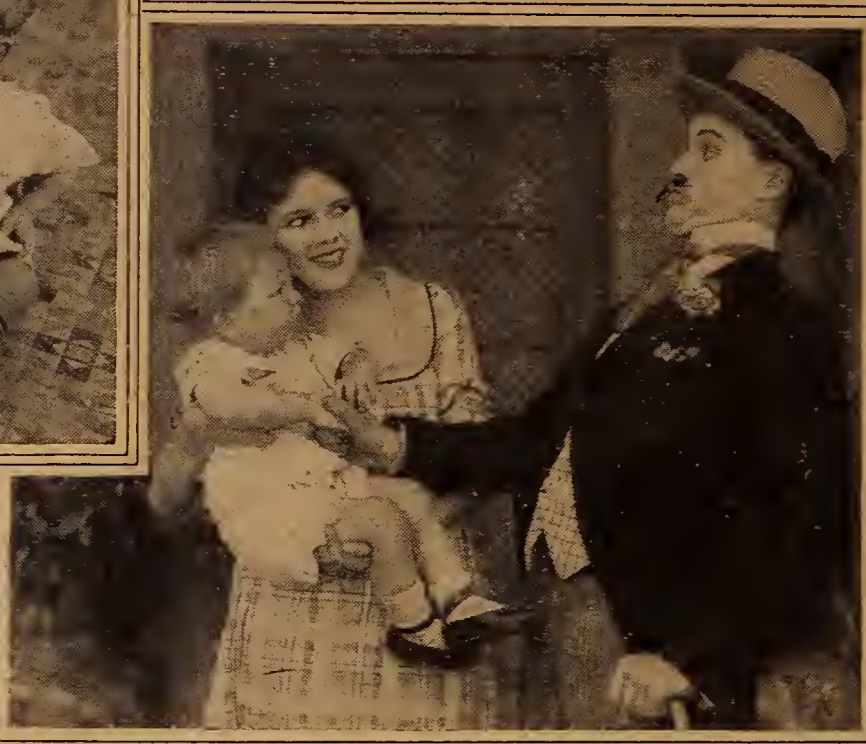
The Prairie States of the Middle West are now well settled. Groves everywhere have been planted, and are now well grown and have become what they were planted for—windbreaks—[CONTINUED ON PAGE 40]

A Good Bad Actor

Paramount Production



THEY say Opportunity knocks once at every man's door—sooner or later. In the case of this young man it was very soon—somewhere between his last colic and his first tooth, we are told. He is Don Marion Davis, son of Mr. and Mrs. Henry G. Davis, of Hollywood, California, and in becoming an actor while still in a milk-fed state he has gone absolutely contrary to his mother's wishes. She had him slated for a cardinal or something. But the movies got him.



THE way Don got into the movies was simple. He just went over to the studio and tumbled around the director's feet, getting right back in the way again just as often as he was gently lifted out of it. And just as his mother, her visit finished, was folding him up and packing him into his two-gallon cart, out rushed the director and asked her please could he use Don in a picture. She said yes, and—zip, went a cardinal!



HERE we have Don laying the blacksnake (made of a soup spoon of course, but Don insists it's a blacksnake) on the unoffending back of Teddy, Mack Sennett's famous dog. Outside of business hours Don's favorite pastime is pulling Teddy's ears. It shames us to disclose the weakness of this great actor, but it must be confessed that he has been roundly spanked for this trick several times. Thus far, however, it has failed to cure him. Genius is bullheaded, you know.



BUT even being world's champion movie star of the romper-weight class has its drawbacks. It gets tiresome, for one thing—this being slammed around like a sack of flour, even if you do earn \$25 or \$2,500 or some such sum a week for it. You can't make mud pies out of that, even if you have the time. The point is that Don struck just before this scene was filmed, and had to be coaxed by having his pay raised to four all-day-suckers a week, instead of two.

AND yet, for all his success as an actor, Don constantly reverts to type. He dearly loves scenes in which it is part of the picture to get thoroughly dirty. And anyone who knows small boys, or has ever been one, knows that his happiness is in no small measure dictated by the degree of his dirtiness. There is something wrong with the boy who doesn't like to get dirty. There is nothing wrong with Don.



NOW while Don is busy looking at the goslings we will finish up his page, and go on to the next. On closing, it is only fair to say that neither his father nor his mother is on the stage or in the movies. So movie starring in "Back to the Kitchen" and "Down on the Farm" is perhaps only a passing fancy with him. He may be a cardinal yet.



Power for the Peak Loads—Have You Solved That Problem Yet?

By Francis Z. Hazlett

THERE are two busy times in the year on most every farm when more power is required for field work than at any other time, and nine times out of ten the farmer keeps enough power—horse, mule, or tractor—the year round to get him through these rush seasons. I have talked with farmers all over the country on the subject, and no matter where the farm is, how big it is, or what crops are raised, there are nearly always one or two horses which would not be needed if it were not for these peak-load periods, often not more than a week or ten days long.

I never realized how marked these peak-load periods are until I saw on paper a record of the work done by the horses on some well-established and seemingly well-conducted farms. One of these was a 640-acre farm in the Dakotas, raising spring wheat and oats almost exclusively, and with half the land summer-fallowed each year. Chart No. 1 shows the number of days of work done by the horses during the different periods of the working season on this farm.

There are two peaks of horse labor here—one in the midst of the planting season, the first part of May, when all the available power must be used for getting the ground ready and seeding the grain; the other around the middle of August, when the harvest is at its height. It takes two or three more horses to do the work at these two busy times than are needed at any other time of the year.

If you are acquainted with the winter-wheat country you know that with preparing the ground and seeding following close on the heels of harvest the peak load for the horses is even more pronounced than it is in the Dakotas.

Chart No. 2 shows the horse labor on a typical 240-acre corn-belt farm. Here we have one very marked peak about the middle of May, when the plowing and fitting ground must be finished and the corn planted as soon as possible. This farm could be run with three or four less horses if it were not for the fact that this great amount of peak-load work must be done without delay.

ON NEITHER of these farms is there a peak load of man labor during the planting season, for four and six horse implements are used, and one man does as much as two or three men could do if only two-horse implements were used. But it takes as much horsepower to plow an acre when it is done by a six-horse team with a gang plow as when it is done by a two-horse team with a little walking plow.

Farm accountants tell us that it costs from \$150 to \$200 a year to keep a horse or mule now, and that he consumes the produce of from four to five acres of ground. Of course, all this cost is not made up of actual outlay of cash or marketable feed, and if you have a productive farm and follow a careful system of feeding it doubtless takes less than four acres of tillable land to support each of your horses. But, at best, keeping horses and mules is costly, and no one keeps more than is necessary.

Now, is there no way you could get along with less power and still run your farm as it should be run? We have to think about many things besides horse labor when deciding what crops and how much of each to grow, and it will not do to try to get along with less power by simply spreading the work of the busy seasons over wider periods, for surely an unfavorable season,

an accident, or something else over which you have no control would bring you to grief sooner or later. But possibly you can sell some of your horses and hire some of your work done during the busy seasons, or arrange to get some exchange work from a neighbor at such times. Maybe a tractor would be the best and most economical power for the peak loads. Or, if you cannot reduce the number of work stock, could you cut down the cost of keeping those you have to use only during the busy season?

Everybody's farm is different from everybody else's, and there is no one plan which all can use. You may have thought over all these points, and decided that you cannot make use of a single one of them, but I have found that the man who is handling his power problem better than his neighbors, usually has adopted one or more of these plans.

A wide-awake young farmer in Iowa whom I visited

not be so expensive after all. So when the opportunity presented itself he sold two more of his horses.

The following season happened to be a wet one, and since, when haying time came, he was a little behind with his corn cultivation he went to town and contracted with two of the teamsters for a week's work cultivating corn and making hay. The cost of the hired horse labor, aside from the man labor which he would have needed anyway, was something like \$50 or \$75. Most certainly this was cheaper than keeping an extra team throughout the year.

Of course, floating horse labor about the towns is not as plentiful as floating man labor, and it cannot be expected that any system of hiring extra power, either animal or mechanical, can be carried to the extent that hiring extra help for harvest in the wheat country, or for making corn in the corn belt, or picking fruit on fruit farms,

hire some horses next spring, if he sells a couple this fall, must arrange for his co-operation six months in advance, and will want to be reasonably sure that he can continue the arrangement in future years. The experience of tractor owners everywhere shows that tractors are best suited and most used for plowing and preparing the seed bed, and on the farm where this work represents the peak load for the horses the addition of a tractor will easily remove the peak and enable the farmer to cut down the number of his horses, besides speeding up the work all around.

But, as with any other piece of farm equipment, the cost per day or hour of work done will be excessive unless there is a goodly amount for it to do. If your farm is so small that there would not be enough work for a tractor to make it economical, the purchase of one with a neighbor on a similar farm might be feasible. If you use the tractor just enough to remove the peaks of horse labor on your farm, it will enable you to dispose of as many horses as you could if you were the sole owner.

I know two brothers-in-law who live on neighboring farms in southern Pennsylvania. One has about 80 acres, and the other about 95 acres. Several of their neighbors had bought tractors, and each of these men had considered the matter. But neither of them could sell more than two horses if he bought a tractor, and each decided that there would not be enough work for the tractor to warrant such an increased investment in power.

THEY had already owned a grain binder and corn binder in partnership for years, and one day when they were talking over their partnership affairs they came to the conclusion that the thing for them to do was to buy a tractor in partnership. They were already agreed on the particular make which would be best for their conditions, and just before the plowing season opened last spring they bought the outfit on a fifty-fifty basis. Between them they sold four horses, and the proceeds paid half of the first cost of the tractor.

One had about 20 acres of spring plowing, and the other 25 acres. The tractor finished both jobs in good time, and was used some for disking and harrowing. They hooked the partnership binder onto the tractor at harvest time, and they planned to use it for sawing their wood last fall. In a short time they were getting just as much benefit from the tractor as though each owned one, and at half the cost.

Like many other men, you may be loath to own machinery in partnership, but where there is such a big advantage you might forget the little disadvantages and petty annoyances due to not having sole control of the machine.

A mare in foal can do practically as much work as any horse, except for the period of a month or two before foaling and for about the same length of time afterward, provided, of course, she is handled intelligently while at work. In the past the man who kept two or three good brood mares, and bred them so that they were not incapacitated for work during his busy season, usually succeeded in getting the power for his peak loads very economically. A good colt at weaning time was worth almost, if not quite, as much as it cost to keep the mare a whole year. But the slump in the horse market, together with the increasing cost of raising colts, has caused many farmers to discontinue breeding mares.

At the best this [CONTINUED ON PAGE 37]



Mrs. Nell B. Nichols

Another Corresponding Editor for Farm and Fireside

LAST August we announced a staff of six corresponding editors who would give their services to FARM AND FIRESIDE readers in solving their farm problems. Since that time we have added two more, and now we introduce your ninth corresponding editor, Mrs. Nell B. Nichols of Kansas, who will assist you with your household problems.

Mrs. Nichols was born and raised on a farm in Kansas, and was graduated from the Kansas State Agricultural College, having specialized in Home Economics. After finishing at the Kansas College she took an additional year's work in Home Economics at the University of Wisconsin, and during the war had charge of the Home Economics pamphlets and bulletins issued by that university. She knows household matters, and her articles and answers to difficult problems will be something you can use. All recipes appearing in FARM AND FIRESIDE will have been thoroughly tested in her kitchen.

You are invited to make use of her training and experience to help you solve especially difficult problems that come up which you have not been able to work out yourselves. Write to Mrs. Nichols, care FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

THE EDITOR.

last summer had bought a tractor two years before, and this has enabled him to sell two of the horses he had kept primarily for use in the rush of spring work. He then found that the peak load for his horses came at the time when he put up the first cutting of his clover hay. He did not have a very large acreage, and it did not take many days' work to put up the hay, but the clover occupied an important place in his rotation, and it had to be put up during corn-cultivating time. If he could devise some way of getting his work done he could sell two more horses. He considered using the tractor, but finally decided that it was too large to be used economically for pulling the mower or rake.

He had noticed that there were several teamsters in the town a few miles away who made a living for themselves and teams by draying and miscellaneous hauling around the town, and he hit upon the scheme of hiring one or two of them to help him through haying. He would have to hire a couple of extra men anyway, and the men and teams would give him both the man and horse labor he needed.

To be sure, they wanted \$8 a day and board for man and team, or \$10 and board themselves. Many farmers would have said that such prices were highway robbery, and dismissed the idea; but my Iowa friend figured that he would have to pay extra men \$3.50 or \$4 a day without the teams, and that hiring the teams would

has been carried. Still, it's worth looking into.

Maybe a neighbor is following a system of farming in which the peak loads come at a time different from yours. If he has a couple of horses which are not busy during your peak-load period, he probably will be glad to hire them to you for a few days. If you are a corn-belt farmer, and if your neighbor has a tractor with which he does the bulk of his plowing and disking and harrowing, he very likely has a team which he will not have any very great need for until corn-cultivating begins. If you do not own a tractor, possibly you could arrange to hire a team from him for a couple of weeks each spring, and thus avoid keeping one yourself the year round. Or, if you own a tractor and have to keep more horses than you really need at the time your neighbors who are still using animal power exclusively must use all the power they have, you might make some kind of an agreement with a neighbor whereby one of you can sell a team or two and hire horses from the other to help with the peak loads?

Farmers everywhere co-operated by exchanging labor or by hiring themselves and teams to their neighbors for such work as threshing, filling silos, and shelling corn. The only important difference between the two kinds of co-operation is that help for threshing and silo-filling can usually be arranged for a few days before the work is to be done, while the man who will have to

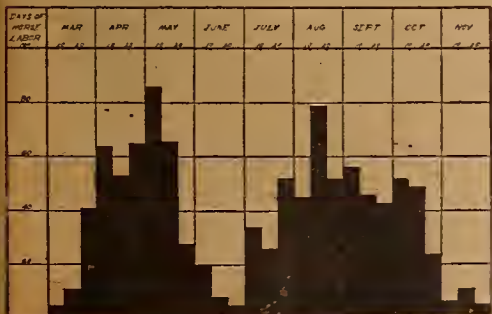


Chart No. 1—Distribution of horse labor on a 640-acre Dakota grain farm

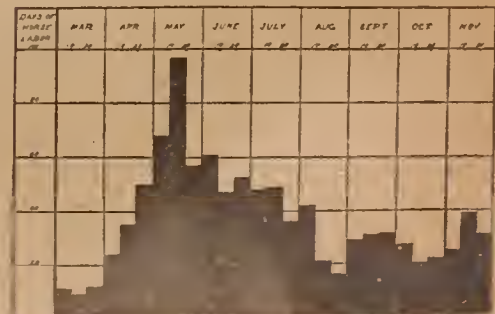


Chart No. 2—Distribution of horse labor on a 240-acre Illinois farm

Do You Know How to Ride a Horse?

IF NOT, take heed of the closing sentence in Lieut.-Col. M. F. McTaggart's *HINTS ON HORSEMANSHIP*, and "blame yourself before you blame the horse. For," says he, "nearly all awkwardness in the saddle is caused by the rider using muscles unnecessarily, either in the arms, hands or legs. . . . What we want to teach is freedom. . . . Riding is far more a question of equilibrium than of strength."

Even in the case of a hard race over a steeplechase course he adds, "if the jockey is properly placed in the saddle he should be neither blown nor exhausted after the event."

The fundamentals of good horsemanship, according to Colonel McTaggart, are the length of the stirrup, the length of the rein, and the position of the body. Of the first he says:

"We should ride the longest length possible consonant with being able to keep the knee pointed (bent). If we are riding too long, then we cannot get our bodies far enough forward, and if we cannot get our bodies far enough forward we are 'left behind' when the thrust comes (in a jump)." Of the second he says:

"The reins should be as long as possible, after one is assured that they are short enough to enable the body to be thrown as far forward as probable circumstances demand. If we are only trotting they can be fairly long, but if we are going to race over fences they must be quite short, and if we are going to jump a six-foot rail in the show ring they must be shorter still." And of that all-important consideration, the position, he says:

"It seems to me that the difficulties have always lain in the past by teaching the young the idea to have the body back, and I submit to my readers the contention that if they will reverse that instruction, and teach body forward, they will find most of their perplexities will fade away, and that their pupils will tumble to the idea as easily as ducks to water."

I call this one of the most valuable and practical little books on riding that has appeared in a long, long time. (The J. B. Lippincott Company, Philadelphia. \$1.50.)

Biddy Strikes for Longer Hours

PROF. HARRY R. LEWIS of New Jersey, in his *MAKING MONEY FROM HENS* (J. B. Lippincott Company, Philadelphia. \$1.50), says that "the average flock in the winter does not have hours of daylight enough in which to consume even the feed required for the maintenance of their bodies, to say nothing of the additional needs for production." And, making it even stronger yet, he quotes a practical poultryman who stated:

"After running lights on my hens this fall I feel that every poultryman who allows his birds to stay on the perches during the long winter night without sufficient feed should be arrested by the Society for the Prevention of Cruelty to Animals, and charged with starving his flock." Perhaps more painful than such an indictment to many farmers would be the loss of eggs, hens, and dollars that might be prevented by a single electric bulb or some other means whereby the industrious hen can be given a fourteen or fifteen hour day all the year round.

Another helpful suggestion is Professor



"Did you lay this?"



A nice clean jump and good position

New Books We Have Read

Lewis' rule for finding how many birds should be culled from the flock during the summer in order to keep its production at or above a 50 per cent level, which, he believes, is the lowest that any ambitious poultryman should be satisfied with.

"Take the observed per cent of production," he says, "multiply it by two, and subtract the result from 100 times. The result will give the approximate number of idle, slacker hens which should be removed to every hundred birds in the flock." His directions for locating those "slacker" hens with a pocket flashlight, as they sit on the perches at night, are equally simple and usable—but that is another chapter in Professor Lewis' book which we haven't space to go into here.

Farming in Fiction

"Oh, do you know the joy that comes from living on a farm, when you have power to do your work, and steam to keep you warm? Oh, happy, happy farmer, his life is free from care—An auto in the garage, and good roads everywhere."

SO SANG the dwellers on Brookside Farm, as told in *HIDDEN TREASURE* by John Thomas Simpson (J. B. Lippincott Company, Philadelphia. \$1.50), at the end of the first year of the new régime that began with the arrival of Bob Williams as "hired man." And no wonder they felt like rejoicing, for having just examined the carefully kept accounting system that they had maintained for the first time in their history they knew that "the farm (125 acres in extent) shows a gross earning of \$12,420 for the new year, and after paying the interest on the mortgage and loans of \$1,860, \$2,000 for wages, and \$2,214 for new furniture, piano, talking machine, and new automobile—a total of \$6,074—it still leaves a balance of \$6,346 as a net gain, and that without counting the earnings from the sand pit." Their potatoes had paid \$170 per acre, the pigs had cleared up \$430, the dairy \$2,954, the poultry \$1,373, the ice pond \$400, and the whole farm a profit of \$124 per acre for the ground under cultivation!

It was all, primarily, Bob's fault. He had apparently the King Midas power of turning anything that he touched to gold; indeed, he even outdid the mythical monarch in that he had but to think up a suitable

plan and, presto, it was magnificently successful and profitable. But he had plenty of help in the form of an almost too philanthropic country bank president, the ability to learn all the fine points of farming from books and bulletins without ever making a mistake, and a neighborhood almost unbelievably ready to renounce its old-fashioned ways and assist him in his advance along the road of scientific agriculture.

That, after all, is in our eyes the main fault of the book—its unrelieved freedom from any sort of obstacle or disappointment. The always favorable conditions, the perfect harmony of interests, the invariable success of every crop and every phase of the enterprise—these things brand it as fiction in the eyes of anyone that really knows by experience that farming has downs as well as ups; or, if not as pure fiction, at least as a concentration around one hypothetical farm of the successes and triumphs that, separately, might have happened on a dozen different ones at different times. And yet inspiration is always worth while, from whatever source, and *HIDDEN TREASURE* is full of suggestions as to improvements and profitable schemes many of which might prove of real help on your farm or mine; moreover, the suggestions are made without hindering for a minute the breezy course of this story of an enviably successful try at modern farming.

Other Books That Have Come to Us

NOT ALL THE KING'S HORSES, by George Agnew Chamberlain. The Bobbs-Merrill Company. \$1.75. A rather slow-moving story of the disasters that befell an American family that staked its fortunes on the development of Mexican mining property during the World War. Written by an ex-counsel-general of the United States at Mexico City, and said to be based on facts.

WOEDED WORDS, by Cora Berry Whitin. The Four Seas Company, Boston. \$1. A collection of rhymed charades with a key to the answers that does not destroy the fun of guessing, but, on the other hand, seems to us as mystifying and amusing as the charades themselves. Good home entertainment material.

ENTERTAINING MADE EASY, by Emily Rose Burt. Edward J. Clode, New York. \$1. A little book to help you become one of those hostesses "whose guests have so good a time that they want to come again."

DRESSMAKING MADE EASY, by Isabel Conover. Edward J. Clode, New York. \$1. Another volume in the "Made Easy" series, which aims to "set forth the quickest and best method for every operation in sewing"—in other words, the simple operations into which, according to Miss Conover, the apparently difficult proposition of making a whole garment resolves itself if thought of and attacked in the right way.

BEGINNER'S BEE BOOK, by Frank C. Pellett. J. B. Lippincott Company, Philadelphia. \$1.25. A small guide-book written especially for the novice to meet his demand—as expressed in many questions asked of the author—for fundamental facts without too much detail regarding the various systems of honey production.

For Little, Light, Fantastic Toes

IF EVER you have seen a cluster of little city children dancing to the jangly music of a street organ—all untaught but with a grace and rhythm that is in their very souls—you can probably understand why students of human history tell us that dancing was one of the very first ways in which men and women expressed their emotions. Because it is such a natural mode of expression, it is good to find an increasing appreciation of dancing in the midst of these days of bustle and "practical efficiency." This is especially true of folk and other dances that mean something, that tell a story, that have a reason.

One trouble has been a lack of simple,

jolly little dances with which to interest and amuse the littlest tots—those, say, from four to seven or eight, who are in the most formative stage of their development as far as absorbing a love for music and dancing is concerned. *DRAMATIC DANCES FOR SMALL CHILDREN*, by Mary Severance Shafter (A. S. Barnes Co., New York. \$1.80), is a collection of two-score little dances, full of fun, full of action and interest, and still suited to the needs and limits of the littlest toddler—dances that give them opportunity to exercise their dance spirit as well as prepare them for the real enjoyment of more advanced measures. They include some of our most familiar nursery rhymes, some of our most beloved fairy tales, and many of the everyday activities of the farm home and the countryside, set to simple music and with directions for appropriate motions and acting. The Washing Dance, the Carpenter's Dance, the Woodchopper's Dance, the Housewife's Dance, and all the rest.

THE HISTORIC TREES OF MASSACHUSETTS, by James Raymond Simmons. Marshall Jones Company, Boston. \$3. Mr. Simmons has pictured and described in this book three-score trees and groups of trees which Massachusetts is rich enough to include within its borders, many of which are beautiful, and all of which are worthy of reverence for their associations with famous men of the early days.

INTERNATIONAL POCKET LIBRARY, in ten volumes. The Four Seas Company, Boston. \$2.50. A collection of flexibly bound little books of short stories through which one can become acquainted with the style and literary skill of some of the foremost novelists of the different countries.

A Bird That Got a Jag on Pokeberry Juice

AMONG the hundreds of interesting and often amazing experiences that make up Gene Stratton-Porter's latest book, *HOMING WITH THE BIRDS* (Doubleday, Page and Company, Garden City, New York. \$2), is the most deplorable performance of a cedar waxwing that Mrs. Porter observed acting peculiarly on a fine specimen of pokeberry.

From having feasted on the frozen and fermented berries, "he was in such a state of intoxication that he did not always secure the berry at which he aimed, and the plumage of his face and throat was badly stained with the juice! He was so unsteady on his feet that he frequently lost his balance and, plunging head first, he fell to the under side of the little branches, to which he clung with his feet; but, hanging head down, and even while he was struggling to gain an upright position, he still continued eating every berry he could reach."

After taking several photographs of the bird in his disgraceful state, Mrs. Porter found that he was unable even to resent being handled and picked up, "so I put him back on the bush and left him in what could be considered nothing less than a state of intoxication."



Mrs. Porter as she dressed for years of her hardest work afield with birds, moths, and flowers

"Abraham Lincoln"— A Wonderful Play

ABRAM LINCOLN is with us to the life at the Cort Theater, New York. To those of us who have seen his character re-incarnated in the really great play by John Drinkwater, there must come a feeling of wonder that American playwrights have overlooked for more than half a century the dramatic possibilities of the stirring events through which the best beloved of all our Presidents moved as a tragic and intensely human figure.

Yet I think that an American playwright would have been hampered in doing what Mr. Drinkwater has done. He would have been overanxious. He would have crowded the play with incidents big and little, and, in trying to show too much, would have achieved only confusion.

Mr. Drinkwater has the advantage of looking at Lincoln with the impartial eyes of a foreigner—yet a foreigner who speaks the same tongue and is moved by the same ideals. The result is magnificent. When this play goes on the road—as it probably will have done before this appears in print—it should be seen by every American who has been strengthened and inspired by the life of the great War President.

"Abraham Lincoln" is the title of the play. It covers the last five years of Lincoln's life, from 1860 to 1865.

You see him first, in his home at Springfield, as he is offered the nomination for the Presidency. You are shown an exact replica of the room, even to the candlesticks on the mantel.

The play is in six scenes. Each one is simple, yet full of vital drama. You feel the agony of the Civil War, with Lincoln's humanity behind it all. One of the most touching and delicate scenes comes when Lincoln reasons with Mrs. Otherly, a visitor to the White House, on the necessity of war, while sympathizing deeply with her over the death of her son in battle.

With his wife we find Lincoln a simple, almost child-like man. He is scolded like a schoolboy for dusting his boots with the tails of his Prince Albert coat. Poor Mrs. Lincoln everlastingly bullies him to buy a new hat, but with no success.

The fifth scene is placed near Appomattox, the headquarters of General Grant.

A brief scene where the President pardons a young soldier for falling asleep while on guard duty is one of the most pathetic moments of the play.

The last scene is the lounge at the back of the boxes in Ford's Theater. Here Mr. Drinkwater has been exceptionally happy in his handling of the assassination of Lincoln, on that fatal night of April 14, 1865.

You watch the President deliver from his box a part of the Gettysburg address. When the curtain ascends on the final act of the play, the madman John Wilkes Booth enters the President's box. You hear the fatal shot that ended the life of a great statesman and plunged all America into mourning.

It would have been easy for a dramatist to have made this scene melodramatic. Mr. Drinkwater has not done so. He has made it tragic in its quietness. Stanton steps from the box, and to the wan, scared faces around says very simply:

"Now he belongs to the ages."

WILLIAM HARRIS, JR., who presents the play to the American public, has shown rare judgment in his choice of an actor to portray the character of Lincoln. Not only does Mr. Frank McGlynn look astoundingly like Lincoln, as all of us have seen him in picture and a fortunate few of us in the flesh, but he seems to live, to incarnate, the austere yet superbly human life of the Great Emancipator. In Mr. McGlynn's acting one feels the utter fatigue of the statesman when he is alone—free both from foe and parasite—and one experiences a lifting of the heart as the spiritual Lincoln shakes loose from his weariness after a few minutes with the Divine Being.

Mr. McGlynn has been on the stage many years, but this is his first great triumph. Heretofore he has played a number of character parts, and played them excel-

lently. Mr. McGlynn would have chosen the character of Lincoln above all others—real or imaginary—through which to achieve fame.

Mr. McGlynn was born in California.

Like Lincoln, he studied law, and for two years he practiced at the bar in San Francisco. He has never regretted giving up law for the stage. The study of law interested him, and will always do so, but on the stage he has found that peculiar avenue for full self-expression which every normal human being craves.

Shortly after taking up stage life, Mr. McGlynn went back to California to fill a six months' engagement. He stayed there six years, playing chief-

Mr. McGlynn's father, who is seventy-nine years old, wrote back that the last time he saw Lincoln was in 1856.

"The things that hit me hardest," ran the letter, "were that he said what he

Frank McGlynn as Abraham Lincoln, and Miss Jennie Eustace as Mrs. Otherly, in Drinkwater's "Abraham Lincoln"



You Should See This Play If You Get a Chance

THIS great play, "Abraham Lincoln," will some time within the next year be playing at a theater in a city near your home. When it comes you will want to see it. It is one of the few plays that are really worth seeing.

Incidentally this is the first play we have ever recommended to the readers of FARM AND FIRESIDE. We farm folks appreciate really good things, and we

are going to make it our business hereafter to see the plays that start in New York, and tell you from time to time which ones are worth while, in our estimation.

Maybe you'll agree with us, and maybe you won't, but at least we won't flood you with a lot of soft soap about plays that are no earthly good.

THE EDITOR.

ly villains and principal character parts. These California days gave Mr. and Mrs. McGlynn a chance to have a permanent home for their family. There are six children, the eldest now a grown-up daughter of seventeen. Four of the six children are sons.

I asked Mr. McGlynn if they were going to be actors too.

"Perhaps," he said. "But I'd rather have them ranchers, or farmers or lawyers, or members of some other business or profession where they can toast their shins in front of their own firesides at night. It's no joke to wander around over the face of the earth away from one's family. I tried it once for thirteen months. It was too much for me. I had to give up my engagement and come back to my home. To be away from one's family is like being a wandering hermit."

When Mr. McGlynn was given the part of Lincoln, he wrote to his father, who lives in the West, and who had seen the statesman on several occasions.

"Tell me just what Lincoln was like—how he impressed you as you watched him," pleaded Mr. McGlynn. "I've had my own visions of the rail splitter ever since you used to take me on your knee when I was a little boy and tell me stories about him. But I wonder if the vision I have kept through the years is the right one after all."

meant; he wasn't afraid to think; that it would be mighty hard for anyone to fool him, and that he had infinite patience and faith in human nature. I also remember that he used very few gestures—almost none at all."

He related in the letter an interview between Lincoln and General Siegel, before the latter received his commission. Some friends, as a practical joke, placed a fire-cracker under Siegel's chair. Suddenly, as he and the President were talking, the cracker exploded. Neither the statesman nor the soldier flickered an eyelash. A moment later, however, the President said with a ghost of a smile:

"When the application for your commission came through, Siegel, I didn't quite know what to do about it. Now I've made up my mind. You've proved your nerve under fire."

Hind, one of the delegates, says of Lincoln: "I'd tell most men, but I'd ask him." With Mr. McGlynn you have the same feeling. If you were in trouble or wanted advice of any kind he is just the sort of person you would go to.

Mr. McGlynn hopes to play the part of Lincoln not only in New York but also over the country. There is not the slightest doubt he will do so.

It would be interesting to witness the play with Mr. McGlynn's father. He is naturally impatient to see his son in the

rôle. Should Mr. McGlynn take a long time to get out West, he is going to beat him to it, and come East.

Little did he think when he saw Lincoln in 1856 that his son would be impersonating him in 1920.—MARGARET NYBLOC.

Some Sayings of "Honest Abe"

"HAVE a grain of common sense. If I send a man to buy a horse for me, I expect him to tell me that horse's points—not how many hairs there are in his tail!"

"You remind me of the boy that set forty-three eggs under one hen, and then told his mother: 'I just wanted to see her spread herself.'"

"No men living are more worthy to be trusted than those who toil from poverty, none less inclined to take or to touch aught which they have not honestly earned."

"Quarrel not at all! A man resolved to make the most of himself can spare no time for personal contention."



Pastures like this Chester County, Pennsylvania, one are always profitable. The river is the historic Brandywine

Don't Trust Entirely to the Lord to Make Your Pastures Grow

By John H. Voorhees

THE most common questions I encounter in my travels among farmers as an extension worker are about ways of improving the pasture, the sheep lot, or the cattle lot. Most of my work to-day is in New York State, but I made a trip across the boundary into Ohio a few weeks ago and found conditions there very similar. One farmer with whom I was taking dinner said:

"I want to take you out over my pasture lot after dinner. I have too long trusted the Lord to make the grass grow, and now I have got to do something."

A week later I went down to the great Albemarle pippin section of Virginia to visit my brother-in-law. We were, of course, primarily interested in apples at the time, but our conversation drifted from one thing to another, and finally to the pasture.

In many places in Virginia farmers pasture the woods and small strips of hill land adjoining the woods. Pasturing has continued until now there is very little grass for the animals to eat, and even in the most backward sections the problem has come to the front. The local storekeeper in that section said that the inquiries for lime and acid phosphate for use on pastures, while few, were increasing every week.

When I get back to the office from a trip I find that among my mail about four letters out of five are inquiries about pastures. Most of them read something like this:

"What can I do to improve my pasture lot? Clover has practically disappeared, and the grasses left are short and tough and don't seem to amount to anything. My cows drop in milk when turned out, instead of increasing as they used to do. Can you tell me what I can do to bring it back?"

I answer yes, and it may pay you to do it, though it may involve a considerable outlay of labor and money at the start, because so many pastures have been so long neglected.

ON many farms there have been for many years serious profit leaks through the pasture fields. They have become run-down, and many are not even paying interest on investment. This, regardless of whether they are located on expensive or inexpensive land, and regardless of the type of animal used to graze upon them—a dairy cow or a sheep in the East, or a horse, a sheep, or a beef animal in the West and South.

The pasture is one of those parts of the farm which has always been considered Nature's gift, neglected and allowed to get along as best it could without any care or thought, except perhaps to the fences. Yet, the pasture may be made a good source of income, because it responds to good treatment quite as readily as any crop produced on the farm, and it is a crop.

My work has taken me over the New England States, New York, Pennsylvania, New Jersey, Delaware, Maryland, and the

Virginias, and through Middle Western States east of the Mississippi. I have come into intimate contact with this problem of pasture improvement. My conclusion is that the problem of pasture is very similar everywhere, except that the productiveness of pastures are limited in the North by a shorter growing season, and consequently a shorter grazing season, and many pastures are incapable of the greatest improvement and productiveness because they occupy the poorest part of the farm. They may be hilly, stony, and rough.

Regardless of the season, the soil, or the condition of the pasture, there appear to be three main rules to be observed in pasture improvement. They are:

1. The maintenance of fertility.
2. Systematic reseeding with varieties of grasses and clovers adapted to local conditions.
3. Limitation of the amount of grazing. It should not exceed the growth of the grasses and clovers.

To prove that it will pay to improve the pasture lot is difficult because there is the cost of maintenance to add after the first costs, all expenses extend over a period of years, and during this time no one can tell exactly how much a cow, a horse, or a sheep eats.

To-day, farmers are looking at pastures in the light of the amount of feed the grazing upon them will replace. This does not

mean that it is unnecessary to use concentrates for animals while they are on pasture, but it does mean that the same amount of feed would have to be secured elsewhere or from some other source if pastures were not available.

Several years ago I visited a number of farmers in Sussex County, New Jersey, where it is said more milk is produced than in any similar area in the United States. Two of these men were growing millet and cutting part of their standing corn to tide over the summer pasture, while two others had the year before built small summer silos for the same purpose.

WHEN all was considered, both methods were found to be much more expensive than pasture, and these same men told their neighbors that they thought it would be more economical to improve the pasture or, in case the acreage of pasture land was small, to buy a near-by farm, improve the pasture land on it, and pasture young stock there to relieve the conditions on the home farm.

The best figures available show that an acre of pasture will replace the following amounts of feed, expressed in dollars and cents, based on 1918 prices: May \$4.40, June \$6.05, July \$6.34, August \$6.25, September \$5.69, October \$2.63, or an amount equal to \$31.36 annually. If these figures are anywhere near correct, the improve-

ment of pastures is undoubtedly worth not only consideration but action as well.

Some three years ago, when I was managing a large farm in New Jersey, I had occasion to put down two pastures of approximately eight and seventeen acres, respectively. I visited these pastures a short while after an absence of two years, and I was most agreeably surprised. It is my opinion that they will stay down for fifty years, and that they will improve every year if accorded good treatment. One of these fields was low, flat, and wet in places, with a small brook running through the center. The other was slightly sloping, wet in one or two places, but generally good. Both had heavy clay soils, with an occasional area where some gravelly soil prevailed. They had been farmed rather poorly for years, and neither was in a high state of fertility.

In 1915 one field was cropped with corn, and the lower flat field was cropped with buckwheat. In both cases I noticed a good effect upon the quack grass which had almost taken possession. That fall both fields were plowed a bit deeper than usual, and the furrow slices thrown diagonally on edge. There was much snow, or, better, successive snows, and a gradual letting out of the frost in early spring by successive freezes and thaws. It is my opinion that the winter conditions helped a great deal by breaking up the hard lumps of dirt and disintegrating the small particles of clay.

After I had finished corn-planting the next spring, both fields, which had by this time a good growth of weeds, were harrowed with a new disk harrow, and leveled with spike-tooth and spring-tooth harrows from then until about August 20th every few weeks, until both were in excellent condition. The summer was hot and dry for the most part, and the constant harrowing put the finishing touches to the quack grass and other weeds, including numerous thistles.

It was not as difficult to rid the fields of these weeds as I had expected it would be, but I must admit much help from the dry summer and hot sun. During this period of diligent working a liberal dressing of lime was made, in the form of finely ground limestone, to supplement a former small application of approximately 1,000 pounds of hydrated lime. Just prior to seeding, fertilizer containing both available and organic nitrogen and rich in phosphoric acid was drilled into the surface soil. The continuous working had brought the soil into excellent condition, and the seed bed was fine, level, and firm. It is my opinion that this summer fallowing had much to do in conserving the moisture supply, because the grasses and clovers grew rapidly from the start.

I exercised great care in determining the mixture of seeds. As one of the men expressed it, "We put every kind of seed that grows in the mixture." This was hardly true, because the seeding mixture was pre-arranged with a [CONTINUED ON PAGE 30]



Southdowns grazing on the well-kept grounds of Morgan Horse Farm No. 1, Middleburg, Vermont

What Ohio is Doing for Her Farmers in the Way of Testing Tractors

By Frederick W. Ives

Vice President American Society of Agricultural Engineers

WHEN the tractor industry was still in its infancy—and that is a period not yet passed entirely—the farmer who purchased one of these iron horses did so with his eyes shut. He was compelled to accept the manufacturer's rating without question, and many of the manufacturers did not themselves know what their product would do. The farmer tried out the tractor, and found its weak points. In some cases the adjustment was easy; in others the farmer was left with a "lemon."

This condition was not fair to the farmer, nor did it promise well for the manufacturer. The fortunate farmer became a tractor booster, but the man who had been stung was not always willing to try again.

Some work in the economy of steam tractors was begun in the Winnipeg contests, but few oil or gasoline tractors took part. The tests were so far away that only a few farmers in the immediate vicinity saw or even heard of the tests except in a rather distant and not impressive way. A few engineers and college workers benefited, and a ground work for real tractors tests and demonstrations was laid.

National tractor demonstrations held in the United States under the auspices of associations and societies interested in the development of tractors were the next step in advance. These demonstrations were held in Kansas and in Nebraska, and drew large delegations of salesmen, engineers, manufacturers, and farmers. However, these demonstrations did not reach the farmer in an intimate way. They, like the Winnipeg contests, had their value chiefly in the promotion and furtherance of the tractor industry, and pointed the way toward other events in the various States,

which reached the farmer in a more definite way.

The Ohio tractor demonstrations and tests came as a result of the belief that the farmer and manufacturer would both benefit by getting the tractor as near the farm as possible. Acting with this thought in mind the Department of Agricultural Engineering of the Ohio State University, aided by the extension service, inaugurated a tractor test and demonstration, and held a short course in tractors in conjunction with Farmers' Week, in the winter of 1918. The tractors were placed in competitive tests for belt power on a Prony brake built by the department.

Some of the tractors made a fine showing, but a majority merely came within the limits of their rating, or went below by a considerable amount. Most of the manufacturers accepted the results, and set about bettering their products. Some few were indifferent, and others protested that they did not have a fair chance. In order to give everyone another trial, it was decided to hold a test of belt power on the brake and a fuel economy run while pulling a plow or plows. Accordingly, a demonstration was arranged for the fall of 1918. This demonstration was held near Marion, Ohio.

The Marion tests showed much of the true worth of the tractors, although some manufacturers and some farmers did not see how a motor could perform acceptably on a plowing field and get below rating on a break test. The result of careful study of the tractors showed some weak points in design, notably the poor design of the governing mechanism, difficulty in throttle and carburetor adjustment, and the effect of personality of the operator.

Again it was demonstrated that but few of the tractors had reserve power. Many

did not reach their rated horsepower, which, at least in theory, should have done so. Investigation showed that some tractor factories had no means for testing their motors, and the manufacturers did not know what they had. The result of the test, so far as both farmer and manufacturer were concerned, was to show the necessity of sending out tested tractors to the trade. Also, several manufacturers changed motors or rerated their tractor to something like its real capacity.

The Farmers' Week tests of 1919 brought out many new models. Fully 3,000 farmers saw tests made of tractors that they were interested in as owners or prospective owners. The showing made at these tests was decidedly better than at previous times. Fuel economy, ease of operation, and reliability were all better than tests made before. Farmers and manufacturers alike seemed to be satisfied with the results.

UP TO this time the department had not been able to test the tractor as to rated drawbar pull. Some work had been done on fuel economy on the drawbar. It seemed desirable to institute such tests, so a recording dynamometer was purchased. This dynamometer was first used in public demonstrations held during the summer of 1919. Four large demonstrations were held in different sections of the State.

It is estimated that 24,000 persons interested in farming attended these demonstrations. Each tractor was given two opportunities to show rated and maximum drawbar pull. Since the tests were held in different localities, the conditions for each test were different, thus giving an opportunity of studying the action of the tractor under different operating conditions. The results were very gratifying. The results

of the tests received wide publicity and much comment. Data sheets of this test have been requested by nearly every civilized country on the globe.

After consultation with the manufacturers, it was agreed to hold tractor-belt tests during Farmers' Week, 1920, at the Ohio State University. Thirty-three tractors entered and were tested. The tests were made under the supervision of the Department of Agricultural Engineering, and were carried out by the aid of junior and senior students of the Student Branch of the American Society of Agricultural Engineers. A three-hour test was made of each tractor, the time being divided as follows: One-half hour to warm up the tractor to rated load; one hour on rated load test, fuel consumption being noted; one-half hour on variable load to determine the efficiency of the governing mechanism; one hour at maximum load and fuel economy at that loading. In the maximum-load test the tractor was not allowed to exceed its rated speed by more than 10 per cent.

In comparison with tests held previously, the tractors performed exceptionally well. In fact, one tractor broke the world's record for economy of fuel consumption per horsepower hour as made in public tests. Nearly all of the tractors were able to pull well above their rated load. All former showings of fuel economy were surpassed by the majority of all the various tractors tested. A table of the results is appended.

The results, to those who have been close observers, show that the tractor manufacturer has awakened to the fact that if he is to stay in business he must keep on improving his goods. The farmer is the real beneficiary of this, since he may be assured that he is now getting much more for his money than he did two years ago.

OFFICIAL RESULTS OF FARMERS WEEK TRACTOR TESTS.

CONDUCTED BY
THE DEPARTMENT OF AGRICULTURAL ENGINEERING
OHIO STATE UNIVERSITY
JANUARY 26 to 30, 1920.

TRACTOR		MOTOR				RATED LOAD TEST								MAXIMUM LOAD TEST								VARIABLE LOAD TEST ★					REMARKS		
NAME	RATING	CYLS	SIZE	R.P.M.	MAKE	AVE. H.P.	AVE. R.P.M.	AVERAGE BELT SPEED FT. PER MIN.	FUEL	LBS. FUEL PER H.P. HOUR	COST PER H.P. HOUR	TEMPERATURE COOLING WATER IN °C.	TEMPERATURE CRANK CASE OIL IN °C.	AVE. H.P.	AVE. R.P.M.	AVERAGE BELT SPEED FT. PER MIN.	FUEL	LBS. FUEL PER H.P. HOUR	COST PER H.P. HOUR	TEMPERATURE COOLING WATER IN °C.	TEMPERATURE CRANK CASE OIL IN °C.	PERCENT OVERLOAD	MOTOR SPEED VARIATION ¼ LOAD	½ LOAD	¾ LOAD	FULL LOAD		GOVERNING	
1	EAGLE	16-30	2	8 x 8	450	Own	30.72	457	2880	Kero.	1.066	2.682	123° 100°	35.9	467.	2940	Kero.	1.185	2.981	164° 100°	19.66	0.0	+1.61	0.0	-2.96	Good	Adjusted Water Needle Valve on Rated Test	Belt Speed too low to transmit Maximum H.P. Pulley lagged for Max. Test	
2	MONARCH	18-30	4	4½ x 6	900	Beover	31.00	910	2160	Gas.	.890	3.72	189° 120°	33.10	920	2210	Gas.	.730	3.055	191° 124°	10.32	0.0	+21.80	+5.45	-11.56	Poor			
3	SHELBY	9-18	4	3½ x 5½	1000	Waukesha	18.20	1012	2030	Gas.	.939	3.928	178° 90°	18.20	1012	2030	Gas.	—	—	—	—	1.11	0.0	+11.62	+4.65	-5.82	Poor	Added 2 Qts. Oil during Rated Test	
4	CLETRAC	12-20	4	4 x 5½	1265	Own	20.80	1314	2880	Kero.	.713	1.79	198° 140°	23.53	1329	2920	Kero.	.713	1.794	199° 140°	17.65	0.0	+4.44	+4.16	-6.37	Fair			
5	WHITNEY	9-18	2	5½ x 6½	750	Gile	17.85	743	2240	Gas.	.858	3.59	166° —	17.85	743	2240	Gas.	—	—	—	—	—	0.0	+1.00	+1.00	-14.35	Poor		
6	TWIN CITY	12-20	4	4½ x 6	1000	Own	20.00	1007	2750	Kero.	.872	2.193	175° 148°	33.12	1066	2910	Kero.	.784	1.927	177° 148°	65.60	0.0	+2.82	+1.69	-1.97	Good +			
7	I. H. C.	8-16	4	4½ x 5	1000	Own	16.20	994	2015	Kero.	.762	1.917	202° 130°	20.00	1031	2090	Kero.	.781	1.967	203° 138°	25.00	0.0	+2.73	+1.17	-1.17	Good +			
8	WALLIS	15-25	4	4½ x 5¾	850	Own	25.75	884	2090	Gas.	.673	2.816	190° 120°	29.41	908	2170	Gas.	.675	2.825	194° 130°	17.61	0.0	+3.79	+3.03	-6.44	Fair			
9	HAPPY FARMER	12-24	2	6 x 7	900	Own	24.39	907	2740	Kero.	1.110	2.793	149° 100°	25.93	970	2925	Kero.	—	—	—	—	8.04	0.0	+7.50	+4.62	-5.50	Poor		
10	FRICK	15-30	4	4½ x 6	900	Beover	31.10	903	3160	Kero.	.896	2.254	192° 120°	32.40	870	3040	Kero.	—	—	—	—	8.00	0.0	+8.86	+7.53	-9.13	Poor		
11	RELIABLE	10-20	2	6 x 7	650	Own	18.08	686	3220	Kero.	.988	2.485	212° 160°	18.08	686	3220	Kero.	—	—	—	—	—	0.0	+3.21	+2.22	-3.96	Fair	Water Needle Valve Adjusted during Test	
12	HUBER	12-25	4	4½ x 5½	1000	Waukesha	24.80	1014	3550	Kero.	.962	2.42	178° 120°	26.12	990	3470	Kero.	.974	2.445	176° 140°	4.48	0.0	+2.28	-0.045	-2.74	Good			
13	AULTMAN-TAYLOR	15-30	4	5 x 6½	900	Climax	30.70	918	2410	Kero.	.818	2.058	176° 120°	38.70	989	2590	Kero.	1.189	2.99	191° 120°	29.00	0.0	+3.62	+1.97	-1.64	Good			
14	EAGLE	12-22	2	7 x 8	450	Own	22.26	455	2390	Kero.	.984	2.475	163° —	23.16	469	2460	Kero.	1.039	2.614	167° —	5.28	0.0	+5.26	+0.99	-9.90	Poor			
15	BATES STEEL MULE	15-22	4	4½ x 6	900	Erd	21.72	882	2310	Kero.	.684	1.720	187° 136°	28.55	966	2540	Kero.	.763	1.92	203° 136°	29.80	0.0	+4.65	+3.16	-3.49	Fair	Water Needle Valve Adjusted during Max. Test		
16	WALLIS	15-25	4	4½ x 5¾	900	Own	25.70	935	2110	Kero.	.917	2.307	191° 144°	25.40	1017	2290	Kero.	—	—	—	—	1.60	0.0	+5.74	+2.30	-8.42	Poor		
17	FRICK	12-24	4	4 x 6	900	Erd	22.70	899	3220	Kero.	.740	1.860	173° 122°	22.70	899	3220	Kero.	—	—	—	—	—	0.0	+6.94	+1.24	-2.48	Fair	Governor would not open up enough to give Max. H.P. at Motor.	Governing controlled by Hand Throttle. No Mechanical Governor.
18	FORDSON	10-20	4	4 x 5	1000	Own	20.60	1031	2650	Kero.	.758	1.907	211° 130°	21.88	1100	2830	Kero.	—	—	—	—	9.40	0.0	+0.30	+8.44	+9.66	Fair		
19	MOLINE	9-18	4	3½ x 5	1650	Own	18.40	1686	3090	Gas.	.8059	3.377	208° 126°	30.68	1750	3210	Gas.	.991	4.147	210° 150°	70.40	0.0	+2.70	+0.81	+1.89	Excellent			
20	CASE	10-18	4	3½ x 5	1050	Own	18.52	1085	4050	Kero.	.806	2.027	186° 100°	20.20	1150	4300	Kero.	—	—	—	—	9.88	0.0	+0.19	+0.00	-1.98		Excellent	
21	CASE	15-27	4	4½ x 6	900	Own	27.15	900	3830	Kero.	.682	1.715	184° 100°	34.05	978	4170	Kero.	.738	1.86	191° 114°	26.10	0.0	+2.43	-0.81	-0.81	Good +			
22	TITAN	10-20	2	6½ x 8	575	Own	20.18	580	3040	Kero.	.935	2.352	195° 162°	31.30	600	3140	Kero.	.823	2.069	207° 174°	56.50	0.0	+3.12	+1.56	-2.08	Good			
23	RUMLEY	12-20	2	6 x 8	560	Own	20.10	563	2860	Kero.	.606	1.524	173° 140°	28.15	572	2910	Kero.	.785	1.970	161° 150°	40.75	0.0	+2.75	+1.93	-0.55	Good +	Water Needle Valve Loose, worked shut, Opened to Original Position		
24	ALLWORK	14-28	4	5 x 6	800	Own	23.30	830	2930	Kero.	1.013	2.548	175° 116°	24.88	847	2990	Kero.	—	—	—	—	—	0.0	+3.27	+2.45	-3.81	Fair		
25	WELLINGTON	12-22	4	4½ x 6	900	Chief	23.35	960	2640	Kero.	.740	1.862	195° 126°	29.00	923	2550	Kero.	1.195	3.006	193° 138°	31.80	0.0	+1.14	+ .86	-3.44	Good	Governor set at Lowest Point gave a 6 1/2% Overspeed on Max. Load.		
26	CASE	22-40	4	5½ x 6¾	850	Own	40.81	866	3780	Kero.	.686	1.726	184° 122°	51.60	930	4060	Kero.	.685	1.723	185° 134°	29.00	0.0	+4.00	+1.68	-0.21	Good			
27	EMERSON BRANTINGHAM	12-20	4	4½ x 5	900	Own	20.35	915	2860	Kero.	.766	1.927	185° 100°	26.85	973	3040	Kero.	.726	1.826	208° 102°	34.25	0.0	+2.34	+1.56	-4.16	Fair +			
28	RUMLEY	16-30	2	7 x 8½	530	Own	30.50	543	3300	Kero.	.722	1.816	153° 162°	39.10	575	3495	Kero.	.777	1.954	149° 168°	30.33	0.0	+3.42	+1.22	-2.44	Good			
29	HEIOER	12-20	4	4½ x 6½	850	Waukesha	20.00	847	2470	Kero.	1.157	2.911	183° 110°	25.31	958	2790	Kero.	1.061	2.667	189° 114°	26.55	0.0	+2.48	0.00	-1.24	Good	Water Line to Carburetor clogged causing a Stop during Max. Test.		
30	HEIOER	9-16	4	4½ x 5½	1000	Waukesha	16.06	1014	2490	Kero.	.855	2.151	189° 136°	22.80	1126	2770	Kero.	.980	2.460	194° 140°	42.50	0.0	+2.99	+1.42	-1.42	Good			
31	RUSSELL	15-30	4	4½ x 6¾	1000	Waukesha	30.18	1034	2840	Kero.	1.160	2.918	171° 130°	30.18	1034	2840	Kero.	—	—	—	—	0.60	0.0	+0.56	+1.12	-7.60	Fair		
32	AVERY	12-25	2	6½ x 7	600	Own	24.26	619	3180	Kero.	.715	1.798	201° 158°	24.26	619	3180	Kero.	—	—	—	—	—	0.0	+3.23	+3.23	-9.05	Poor		
33	WATERLOO BOY	12-25	2	6½ x 7	750	Own	25.15	756	2770	Kero.	.801	2.015	187° —	30.82	790	2900	Kero.	.753	1.897	181° —	23.28	0.0	+5.04	+1.96	-4.76	Fair	Fanbelt Slippage caused Radiator to boil. Adjusted.		

DATA	KERO.	GAS.
TEST SP. GR. at 60° F.	.810	.745
WEIGHT PER GALLON	6.751	6.209
COST PER GALLON	17¢	26¢
COST PER POUND	2.518¢	4.187¢

* Percent Variation (+ above) (- below)
is based on rated speed of Motor at 1/2 Load

AGRICULTURAL EXTENSION SERVICE H. C. RAMSOWER, DIRECTOR	
Signed	
<i>Frederick W. Ives</i>	<i>J. B. Brien</i>
<i>Frederick W. Ives</i>	In Charge of Tests

How I Grow Quality Hogs Cheap, and Make Good Profit on Them

By R. C. Converse

I HAVE been asked many times if I find it a profitable business to raise purebred hogs for the market. People seem to think it is not, because blooded stock brings so much money at the breed sales over the country.

It is hardly creditable to them that I can sell purebreds on the market at \$18 a hundredweight—about \$50 a head—when the farm papers carry accounts of hog sales at which animals brought from \$500 to \$2,000 a head. I thought so too, until I got into the game, and now I find that I can make more money on the purebred stock than I can on the ordinary grade stuff the average farmer produced. And I am just an average everyday farmer, perhaps like you.

I have been in the hog business between twenty-five and thirty years. Years ago I decided to use a purebred sire on my grade hogs. The improvement was slow, but gradually, by keeping out the best gilts, I had a fine herd of sows. The improvement, in the long run, was very noticeable, and not expensive.

Then I got the idea of buying a few purebred sows. I attended a public sale near home, and bought several head. They were fairly cheap, for only until a few years ago has purebred stuff brought such a wide margin over the ordinary market stuff. I bred these sows to a purebred boar, and saved the gilts for my breeding herd. You can still get them reasonably if you watch the sales, and your state experiment station, or your county agent might help you.

The difference between them and the pigs out of my high-grade sows was apparent. This awakened me to the possibilities of the purebred hog for market. When the male pigs were finished for market, they weighed more, had more quality, and brought more on the market. They don't cost as much more as they produce.

The next sale I laid in a few more purebred sows, and kept the gilt pigs that looked good. Gradually I worked out of the grade sows until now more than half my herd are purebreds. I have the big type Poland-China hogs.

In the last few years I have increased my hog business, until now I raise and market about 900 head a year. Years ago, when I started out to increase the business, I set a mark of a "hog an acre." I have reached my goal, my farm being 900 acres.

I LIKE the hog business, and have been increasing it at the expense of my cattle business. Yet I still feed quite a few steers, and will continue to do so, because I have a silo. To quit now would make that a dead investment, although it has long since returned its cost. I need the cattle to turn hay and silage into money and manure.

All of my farm is fenced hog-tight, in anticipation of the increased hog business. Now I can turn the hogs into any field and feel safe.

But to get back: My hogs, while purebred, are unregistered. There is no need for me to keep up the papers, because I never sell any of the pigs or hogs as breeders. They would hardly do, anyway, because they are not of the best families, and a breeder would have no object in buying them.

After two or three litters of pigs, I fatten and sell the hogs, because they get entirely too big. I always like to have a herd of young sows, because they are more active, and make better mothers, I think.

Contrary to the prevailing opinion, it does not cost much to get into the purebred business for market purposes. As I said before, I don't buy the animals of the best-blood lines, but a sow which if fattened would make a good market hog. These cost \$80 to \$100 a head—considerably more than a grade sow; but on the first litter she pays for herself.

I haven't kept any figures on my sows, but I know from the feed they consume and the price I get on the market that the blooded pigs are much more profitable. On an average they will bring 10 to 25 cents a hundredweight more on the market,

and I have seen times when they brought 50 cents more than the grade pigs.

The purebred pig is smoother, and has more quality. This is a point that is hard to get home with some men. They can't see the idea of *quality* in hogs. Quality hogs are better hogs, and you can get more money for them. I believe it is just the same as in cattle, and it counts just as much. Another big point is the amount of feed. I know from watching my pigs that the purebreds do not require as much to put on 100 pounds of gain as do the grade stuff.

These are two advantages that are really worth while. In the first place, the increased market price runs from 30 cents to \$1 a head. One half of the number I market runs from \$120 to \$400. This sum is not to be scoffed at, with everything as high as it is now.

In buying purebred sows I aim to get a good length of sow of the large type. Usually I get gilts averaging about eight months of age. A little feed and pasture for a few months, and they are ready to breed.



R. C. Converse

The "Average" Farmer Doesn't Need to Be an "Average" Success

ALMOST forty years in the hog business has not turned the head of Mr. Converse. He still admits he can learn; in fact, he says he never will stop learning. He is an average practical farmer, but he plans to increase the purebred herd of his until all of his sows are blooded. He has two sons, one of which he is training in his business.

Mr. Converse is a quiet, unassuming sort of man, about fifty years of age. He has quite a big place near Knoxville, Iowa—land worth a whole lot of money. He has increased his livestock business, especially hog-raising, slowly but surely. The thing that impresses you most is the way he is going at it—not spending too much money, but getting quality results.

Instead of trying to jam things through, he is taking it slowly, but doing it right. He says that is the only way to do things.

And purebred hogs do not require any more care than the grade animals. I handle all of mine in the same manner. But somehow a man likes to see the best hogs. If you like the game as I do, the best is none too good.

My hog profits do not end with the difference between the *cost* and *selling* price; they go farther. There is the money I make on the grain they pick up behind the steers, the return from my clover pasture, and the increase in the corn yield on the clover land which is planted to corn the third year.

The eighty I had in clover last year is in corn now, and it will make 75 to 80 bushels. Figure this increase, when 60 bushels can be considered a good yield for the county—in fact, 60 is much more than it makes.

The Editor asked me to tell something of how I handle my sows and pigs, in addition to my experience with raising purebreds for market. My methods are no different than those used by any other farmer, I believe. However, I always keep my pigs on grain, and push them a little. It pays, I think.

In the first place, the fact that I have my place fenced hog-tight is a big help. As I said before, I can turn them into any field. The 80 acres I have in clover each year is also a big help, as you can see by what I figure the return in the form of pork and increased corn yield.

Naturally, with purebred sows I aim to get out of them everything I can, so I raise two litters a year. The method of management and feeding is about the same with

the two litters. The difference is the manner of housing, and fall pigs during the winter must have grain entirely, because there is no pasture to speak of after it gets cold. The death rate on fall pigs, of course, is larger; but I manage to keep it pretty low by pushing the pigs, and having them in the best possible shape when the cold weather sets in.

In figuring the profits on the two litters, I don't think there is any difference if the loss of pigs is small. True, it costs more to feed fall pigs because of the lack of pasture, but I market them along in August and September of the following year, when prices are high.

Both batches of pigs save me money, because they husk part of my corn. I make it a practice of sowing rape and soy beans in with my corn, so they have a pretty well-balanced ration in the one field, and without feeding tankage. Tankage is a good feed for hogs; in fact, I know of no better balancer for corn, but it comes awful high, and when anyone has 900 hogs at one time he knows how much tankage

oats and a half ear of corn, increasing it gradually as the sow recovers from the effects of farrowing. I start in feeding tankage every day, so there will be a good milk flow.

As the sows get to eating better I increase the feed to about three ears of corn, and let them have tankage out of a self-feeder. The pigs in about ten days to two weeks will start to smell around the feed troughs, and soon begin to pick here and there. When they are three to four weeks of age they will begin to eat.

When I notice this I scatter small self-feeders about the houses, and build a creep around them so the sows can't get at the feed. I let the pigs wean themselves. I have shelled corn, tankage, and shorts in these feeders.

When the weather warms up I put the sows and pigs out on grass. The oldest sows are rebred for fall pigs. I keep the bred sows on feed all the time. Of course, the ration is light, but sufficient to go along. In July and August, when the weather is the hottest, I don't feed the sows. They are fat enough, and the heat bothers them.

After turning out, the pigs run to corn and tankage in a self-feeder. I have a concrete feeding platform on which I set the feeder. This saves me a lot of feed, and paid for itself the first year I had it. No feed is wasted if it drops out of the feeding box, for the hogs gather it up.

The platform is always dry, even when the other parts of the place are knee-deep in mud.

I handle my fall pigs in about the same manner as I do the spring litter. The spring pigs are turned in the corn after I have filled my silos.

If the weather is nice I let the sows farrow the fall litter on pasture. I find it is much better than taking them inside. I push the spring pigs right along, aiming to have them 100 pounds or better when the cold weather sets in. At this weight they are in good condition and thrifty, and I am not likely to lose as many as when they are not as strong.

And this is why I believe in good grades and pure breeds for you and me.

Better Markets for South

THE spread of "safe farming" in the cotton belt of the South, and the progress Southern farmers are making in livestock production, is making necessary the establishing of larger and better market and stockyards facilities in Southern cities. Memphis is already waking up to the possibilities of a large receiving stockyards, and plans are being made to provide facilities that will stop the flow of Southern livestock through to Northern markets. St. Louis has been the largest terminal for livestock shipments from the lower Mississippi Valley States; and now cities in those States are aroused, and are bending every effort to stem the tide that has been carrying livestock shipments through to better equipped markets in the North.

Growth of general farming is shown by shipments of hogs from the States of Arkansas, Mississippi, and Tennessee. In the month of April, 1916, the total for the three States was only 21,519, while April, 1919, saw 75,910 fat porkers on the way to market. Mississippi shows the greatest gain, shipping 26,471 in April, 1919, as compared with 3,360 in the same month in 1916.

A bright future for the livestock industry of the lower Mississippi Valley region is predicted by Arthur C. Davenport, manager of the "Chicago Daily Drivers' Journal," who says:

"If there is a country in the world that can produce a greater variety of easily grown pasture and forage crops to tickle the palates of cattle and put flesh on their ribs, I have yet to learn its name and location."

The total value of 1919 crops in the United States is estimated at \$15,873,000,000 compared with \$14,222,000,000 in 1918 and \$6,112,000,000 in 1914.

The Place That a Real Garden Has on My Farm—And How I Make It

By F. F. Rockwell

I HAVE traveled through many States, I have been "cross-lots" through many agricultural sections, and I find nineteen farmers out of twenty do not have a real vegetable garden.

By a real garden I do not attempt to grow a little of everything which the seed catalogues list, but a real, honest-to-goodness garden that will keep the table plentifully supplied with the ordinary vegetables from early summer to killing frosts, and leave a good surplus ready to store for winter when freezing-up time comes.

If the old statement, that a penny saved is a penny earned, holds good anywhere, I find that it holds good on what I get out of a garden. The vegetable crops you grow for your own use can rightly be credited on your books at just what it would cost you to buy the meat or canned goods they take the place of—that is why it pays me handsomely to grow my own vegetables for my own table, even when it might not pay me to grow them for market.

A good many years' experience in the business of growing and selling plants, many of them to farmers who sought information or advice on garden-making, have convinced me that the biggest reason most farmers do not do more gardening is merely because they have never learned gardening. They are sort of timid about trying it, same as they are about trying a new crop, like alfalfa or soy beans, when it first comes into their section.

But no one need hesitate about tackling the job of making a real garden because of lack of previous experience. Any good farmer can have a good garden the first year he tries it, because he has already got the essentials of garden knowledge. I am not saying he won't have a better one the following year, but he can get satisfactory results at the start. I know because I have seen it done time and again.

It is my purpose in this article to give some simple directions for making a simple, practical farm garden, and not the fancy suburban kind, such as the garden experts so often recommend, but the kind any fellow can plant and get paying results from—your kind and my kind.

First of all, let me say, I have my garden near the house. That may seem, first off, like a fool sort of a thing to do when I have half a dozen spots on other parts of the farm where the soil is as good or better, and which could be prepared for planting more conveniently, but I only have to prepare the garden for planting once in the entire season, and I have to plant and cultivate and keep careful watch of it week in and week out for many months.

Furthermore, as the chief object of the garden is to help out with the table, I want it handy, where the women-folks can slip out and get a mess of vegetables without having to upset the whole morning's work, let the fire go out, and run a chance of the baby's falling down the well while a trip is being made over into the field beyond the pasture to pick a basket of peas or string

beans or get a couple of summer squash.

Moreover, if I have a garden at all, I want it where I can get some fun out of it. If it is right near-by, where after supper I can light up the old pipe and go out in my slippers and get the hoe and clean up a row or two before it gets dark, I find myself just naturally doing that of an evening and actually enjoying it, where I never in the world would think of making the effort to go halfway across the farm to do it, for the simple reason that it wouldn't be worth while.

Incidentally, too, many of the troubles which I would experience with rabbits and wood chucks and some other garden pests which are not likely to be serious unless

the soil is only half the story. The first two or three years I tried to have a real garden, a good many of the things I planted failed to come up satisfactorily. Of course, I blamed the seedsman I got the seed from. I was several years before I came to realize just how important it is to prepare the ground, before planting, with absolute thoroughness.

The kind of a seed bed that answers every purpose for oats or field corn, or a potato planter, isn't ready for garden seeds, such as lettuce or carrots or onions.

When I learned better, I harrowed my vegetable garden until it could be made no finer with the harrow, and then raked it over with an iron rake, before planting.



they get an uninterrupted start. I don't have with a garden that is right near the house.

In the second place, I realize at the start that my garden spot is capable of yielding me more profit in proportion to the space it occupies than any other crop I grow on the farm and fertilize accordingly.

I am not stingy with the manure, but pick out the best there is for this purpose—the old, well-rotted, powerful stuff from the heart of the heap, and even after I have given it a good dressing of manure I'm not afraid to use some fertilizer I have got, to a half-acre patch. That, of course, costs a few dollars in real cash money, but it is a good investment. When manure is well rotted and fine enough, I prefer to put it on and harrow it in after plowing, otherwise plow it under. The fertilizer I always harrow in.

I get the garden patch plowed just as early as I can work the soil—I don't keep putting it off until after I get the farm crops in. I plow it all and harrow it thoroughly, even though I can plant only part of it right off. The part I do not plant will sprout some weeds, but they can be killed with another harrowing, or by raking, in one tenth of the time it would take me to hoe them out of a growing crop. Moreover, by getting the entire patch plowed and harrowed thoroughly the first thing in the season, I am saving all the moisture possible against the dry weather that's pretty sure to come sometime during the summer.

But getting enough plant food into

I light up the old pipe and go out after supper to potter around in the garden before it gets dark

Small seeds that are to be covered only one-fourth to one-half inch deep, if they are to have

any fair show toward coming up evenly, must have a smooth, raked-over surface for planting.

After I found this out, I didn't have trouble in getting good "starts" of the different vegetables I planted.

It may seem, at first sight, that taking this much trouble in getting the seed bed just right before planting means a good deal of extra work; but, on the contrary, it saves a lot of work—saves it, first, because I can get the rows perfectly straight and even, and, secondly, because it makes weeding and thinning and cultivating easier, especially during the early stages of growth, when the plants are very small.

Of course, I do all the work I can in the farm garden with a horse and cultivator. But if I have a real garden I find lots of use for a hand wheel hoe too. And I find a smoothly raked surface and straight rows make it possible to work faster and closer with a wheel hoe.

The first few years I had a garden I just planted it. I would buy my seeds in the spring, and plant as far as the seeds would go.

But I found from experience that it pays to plan the garden in advance of planting. An hour or two of an evening is ample to jot down on a piece of paper the amount of space I have to devote to my garden, and just how to use it. How many rows of beans and peas, how many tomato plants, how many rows of beets and carrots, etc.

I have found that the advantage of making a plan is that it enables you to have



In setting out plants I use bone meal, or a mixture of bone meal and tankage, in the hills. It won't burn the roots as some other things often do

things in the right proportions, instead of all together—too much of one thing and not enough of another. The plan should show also what things to plant a second and third time, in order to keep up the supply.

The things that I have found most practical for a general-purpose farm garden include the following (The numbers after each indicate the number of plantings needed to keep up a continuous supply. These plantings, unless otherwise noted, should be at intervals of about four weeks.):

After experimenting with many different ways, I have found that in planting onion sets, cabbage plants, sow seed for winter crop about June 1st. Cauliflower, same. Lettuce plants, beet plants. Radishes 6. Peas, smooth; peas, wrinkled 2. Spinach, kohlrabi 2. Lettuce 3. Turnips 3. Beets 2. Carrots 2. Beans, dwarf 3; beans, pole. Tomatoes (plants), eggplants, and peppers (plants). Sweet corn 3. Cucumbers 2. Melons, squash, summer and winter. Onions, from seed. Parsnips. Swiss chard.

Of the above, onion sets to carrots, inclusive, may be planted early, during April; beans to squash, inclusive, are tender things, and should not be planted until after danger of frost is past. Onions, parsnips, and Swiss chard should be planted quite early, but they are grouped together, apart from the early things, because they occupy the ground the entire season through, while the first group—onion sets to carrots—will be used up by mid-summer, so that part of the garden can be used again for later plantings, of other things.

One reason why farm gardens often do not succeed, is that the planting is delayed until after most of the field crops have been put in. Early planting is one of the chief factors of success. As a matter of fact, the early things can be planted in the garden just as soon as the ground is dry enough to be worked—long before it is safe to plant potatoes or corn.

Plow the garden just as early as it is fit to turn over, and then get in your onion sets, smooth peas, spinach, radish, beets, and carrots as soon as you can—cabbage and other plants can go in a week or so later, also wrinkled peas.

Much of the success with early cabbage, and other things of which growing plants are set out, will depend on the character of the plants. Most fellows look for the biggest plants they can get; I know, because I've sold many thousands of plants. Size, however, is of only secondary consideration. It's more important to have them stocky and well hardened. Soft, green plants, direct from a warm greenhouse, will be put back so much when set out that it takes them weeks to get over the check, even if they survive.

In setting out plants, I use bone meal, or a mixture of bone meal and tankage, in the hills. This mixture will give them a quick start and that dark green color every gardener likes to see, without any danger of burning the roots, which there is sometimes when mixed chemical fertilizers are used.

If the larger leaves are cut back a half at time of planting, especially if the weather is dry and warm, they will be set back less. Cut out a good ball of roots and soil with each plant, like that shown in the accompanying photo. Of course, the plants should be set in very firmly, and deep enough to bring the lower leaves well down to the ground. In very hot weather a sheet of newspaper "tented" over each plant, and held in place with soil or stones, will keep them from wilting down, possibly dying. If the soil is so dry as to make the use of water necessary, put it in the bottom of the hole when setting the plants, not on the surface after setting.



Here is one of my cabbage plants and one of my lettuce plants ready for setting out. Note that the larger leaves are cut back to prevent wilting. Also notice the soil around the roots

Of Course It Ruined Dad's Fertilizer—But It Taught Me a Lesson

By Andrew S. Wing

I REMEMBER well the rebuke that I once got from Father for putting lime on a manure pile. This particular lot of manure offended me because it was in a water-tight concrete tank right behind the cow stable. I had to do the milking, and found that this place was a great breeder of flies.

So, boylike, without consulting anyone, I carried out a lot of sludge from the acetylene machine and completely covered this manure. I also whitewashed the concrete walls and floors of the cow stable, and put about an inch of the thick lime sediment in the trough behind the cows. When I finished, everything was as clean and sweet-smelling as a hospital, and the flies were very hard to find.

But when Father came home and made his accustomed tour of the place he spotted this now inoffensive and very pale manure pile, and took the pains to tell me the harmful effects of lime on manure; for, of course, the sludge from a carbide machine is almost pure lime, and lime unites with the nitrogenous elements in manure, freeing the nitrogen, which is then lost in the form of a gas.

I explained to Father that my purpose in putting on the lime was to stop the flies which annoyed the cows and myself while milking, and which also came up to the house in large numbers. But so great was his respect for the good, rich manure, and his faith in it as a soil builder, that he couldn't see my point. To him this manure meant a better cornfield, lustier alfalfa, or a richer blue-grass pasture. I still feel that he was a little extreme in this case, but it goes to show his belief in soil conservation and improvement.

Buckeyes Good Corn Growers

Ohio farmers have a lot of fun competing for membership in their 100-Bushel Corn Club. This year nine contestants have been successful in raising 100 bushels of corn per acre on 10 or more acres.

The honors this year go to Charles Appel, Lucasville, Scioto County, who husked out 128.81 bushels per acre. His yield is the highest recorded since the contest started three years ago. The contest is fostered by the College of Agriculture, and winners are made members of the club during the Farmers' Week program, held at Columbus each year. I wonder if a club like this wouldn't be popular in your community? Ohio folks say it helps a lot to stimulate better farming.

Yellow Corn Richer Than White

The old belief, prevalent among many farmers, that yellow corn is better for feeding purposes than white has been found to have a scientific basis, by the Wisconsin Experiment Station.

Experiments conducted at that institution show that, while white corn may be as good as yellow in most respects, the white varieties contain practically none of the fat-soluble vitamins, while yellow corn may contain sufficient amounts to allow normal growth and reproduction. The fat-soluble vitamins are essential for the successful growth of all animals.

Other experiments indicated that yellow roots, such as carrots and sweet potatoes, are rich in this essential vitamin. Man-goes and Irish potatoes, on the other hand, contain little or none of it.

In a former experiment it had been noticed that some individuals, in a colony of about 100 animals, had difficulty in raising their young on a diet consisting almost entirely of white corn. So, after it had been determined that yellow roots contain more vitamins than white, an experiment was arranged with eight varieties of corn, all common in the Middle West, and the same results were obtained as with the roots.

H. Steenbock, agricultural chemist, in speaking of the work says:

"We already have indications that certain materials are as rich in the fat-soluble vitamins as is yellow corn, yet they are far less pigmented. The possible economic significance of these experiments, which

are of course being continued, is very apparent."

They're From Missouri

"A good purebred dairy bull may be worth several thousand dollars just from the standpoint of the milk production of his daughters," says M. H. Keeney of the University of Missouri College of Agriculture. "It depends on the man behind the cows."

Then he goes on to prove it with actual figures.

Data gathered in the Webster County (Missouri) Cow Testing Association shows that two cows, sired by a good bull, produced an average of 494.6 pounds of but-

and after seeing his fine blooded Percherons and talking with him about the future of the horses, an account of which will appear in an early issue, I thought, as I rode back on the trolley, of the splendid day I had had, and of the tremendous value to agriculture of such men as Colonel White.

Born in the same county where he is now living, but called by business to the city, where he succeeded, while still a young man, in accumulating a small fortune in the grain business, he had the wisdom and foresight and love of his home and country life to go back to his boyhood home. He added a good many acres to the original estate, planted a large orchard, built one of the finest Colonial houses I have ever seen, and started raising purebred Percherons. And he has been raising them ever since—



When Habit, Kentucky, folks want to draw a crowd to their community doings, they always call on the farmers—this double quintet of "musickers"—to don their blue-overall full-dress uniforms, and enliven the affair with some real harmony

Here's the Farmers' Brass Band of Habit, Kentucky

THE Habit Farmers' Club has its own brass band of ten pieces. This unique musical organization always dons its regulation uniform of blue overalls when it is to give a concert at the club house. In fact, the uniform has secured for the band its everyday name of the Habit Overall Band.

When the writer visited the Habit Farmers' Club, which is twelve miles over rough roads from Owensboro, Kentucky, he expected to hear very poor music. He was most pleasantly surprised at their program, as all of the members of the band take their work of making the club popular quite seriously. The club, by the way, is made up of the farmers, their wives and children who live on the farms about Habit, which consists of a store, a church, a school, a blacksmith shop, and the club house.

The oldest member of the Overall Band is a man of forty-five, and his son of fifteen plays the trombone. As the writer chatted with the leader after taking the picture used with this little story, the farmer said:

"We find that our band helps to draw a crowd to our meetings. You see, we've got an idea pretty well fixed in our minds that it pays to sugar coat our meetings with a good lot of snappy music."

Maybe there's brass-band material among the farmers in your community. It's a heap of fun, the Habit farmers say.

JAMES SPEED.

terfat, with a net profit of \$244.56 above cost of feed.

Nine cows in another class, of which four were sired by the same bull, produced an average of 268.2 pounds of butterfat at a profit of \$159.52. Other cows in the same test, with scrub or ordinary sires, averaged from 128.6 to 206.1 pounds of butterfat, and profits from \$48.51 to \$63.13 per cow.

Bulls of this character are worth thousands of dollars to their owners. They would be cheap at most any price, because they put the stamp of high production on all their offspring. In Missouri, dairymen are securing these herd-building bulls through co-operative bull clubs. In this way the cost per farmer is little, if any, more than a scrub, and the benefits are a hundred times as great.

A Gentleman Farmer of the Right Kind

During a recent visit to the Capital I took a very interesting trip up to Colonel E. B. White's place in Loudoun County, Virginia. We drove out from Leesburg through a beautifully rolling country lying in the shadow of the Blue Ridge Mountains. After enjoying the fine hospitality of our host,

not in the usual retired rich man's way, but as a practical and constructive breeder. As such he has done much for the breed and for the horse industry in general. He has brought home many blue ribbons from the big shows, with horses he had imported and with those of his own breeding.

We need more men like Colonel White, men of means who farm not just as a hobby but because they are really interested in making things grow and in improving the livestock of the country; men who have their souls firmly rooted in the soil, who are gentlemen, business men, and citizens of the highest type.

What Manure is Worth to You

If you saw a neighbor throwing five-dollar bills around his barnyard, or using them to light his pipe, you would say he was crazy; and probably you would be right.

And yet, whenever a ton of manure is left out in the weather until the fertility has all leached out, a five-dollar bill is slipping out of your fingers. That is the value determined in a series of trials, on various experiment fields, by the University of Missouri College of Agriculture.

To be exact, the average application of

eight tons of manure to the acre, once in four years, has increased the yield of corn 10.5 bushels, oats 5.17 bushels, wheat 5.24 bushels, and clover hay 937 pounds. At prices which prevailed early in 1919, this increase would be worth \$4.83, and at pre-war prices \$2.34, for each ton of manure applied. This leaves a net profit of \$3.83 at present prices, or \$1.34 at pre-war prices for each ton of manure applied.

The full value of the manure is usually not obtained during the first four years, for the soil is left in better condition, and the effect on later crops is often quite significant.

As about 35 per cent of the nitrogen and 55 per cent of the potassium is to be found in the liquid material, it pays to use plenty of absorbent materials, and to get the manure to the fields before this has had a chance to leach away.

Liberality with the use of bedding, and the use of concrete-lined manure pits, will do much to conserve this most valuable part of the manure. Furthermore, it should be remembered that nitrogen is lost in ammonia gas when manure is allowed to lie and ferment. Whenever manure gets heated up, you may be sure that ammonia is being lost, and very often it can be detected by its unusually pungent odor.

The total solid and liquid manure produced in a year by a well-fed, mature horse is about eight tons, with a plant-food value of more than \$30. In the case of a well-fed steer weighing from 1,000 to 1,200 pounds the production is nine to eleven tons, with a slightly greater value than the manure from the horse.

The Missouri College points out that from three to five months' exposure to the weather, in any open lot, may cause manure to lose approximately one third of its plant food.

To Make Better Beef

Incidentally, the importance of improving our livestock was brought home to me while attending the International last fall. I took a stroll through the Union Stockyards. I had been there before, but I never had been so forcibly impressed with the general inferiority of the average meat animal that comes off the farm.

All you who visit the International or are familiar with the stockyards know this. After looking over the wonderful form and finish of the animals at the show, it is indeed rather depressing to stroll through the yards and see the thin-fleshed, peaked-rumped, slab-sided specimens that make up the bulk of the sales. It makes one realize how far we have to go before maximum production will be reached on our farms.

Of course, no one expects ever to see all the animals that go to market of the same quality that you see in the show ring. But the more wide-spread use of purebred sires would serve to bring the average up. Much progress has been made in the elimination of the scrub, but there is still much to do.

And while I was thinking of this very thing I picked up a copy of the "Weekly News Letter," and found a splendid article on how to get economy in beef production. Their ten rules are so good that I clipped them out for you. Here they are:

TEN RULES OF BEEF PRODUCTION

FIRST—Plenty of pasture and feed.

SECOND—The right kind of cows—those that will produce good calves regularly.

THIRD—A good, purebred registered bull—one that will sire good calves persistently.

FOURTH—A large calf crop. This means that all cows shall drop calves, and that the calves should be properly cared for at birth.

FIFTH—Proper care of the breeding herd and the calves.

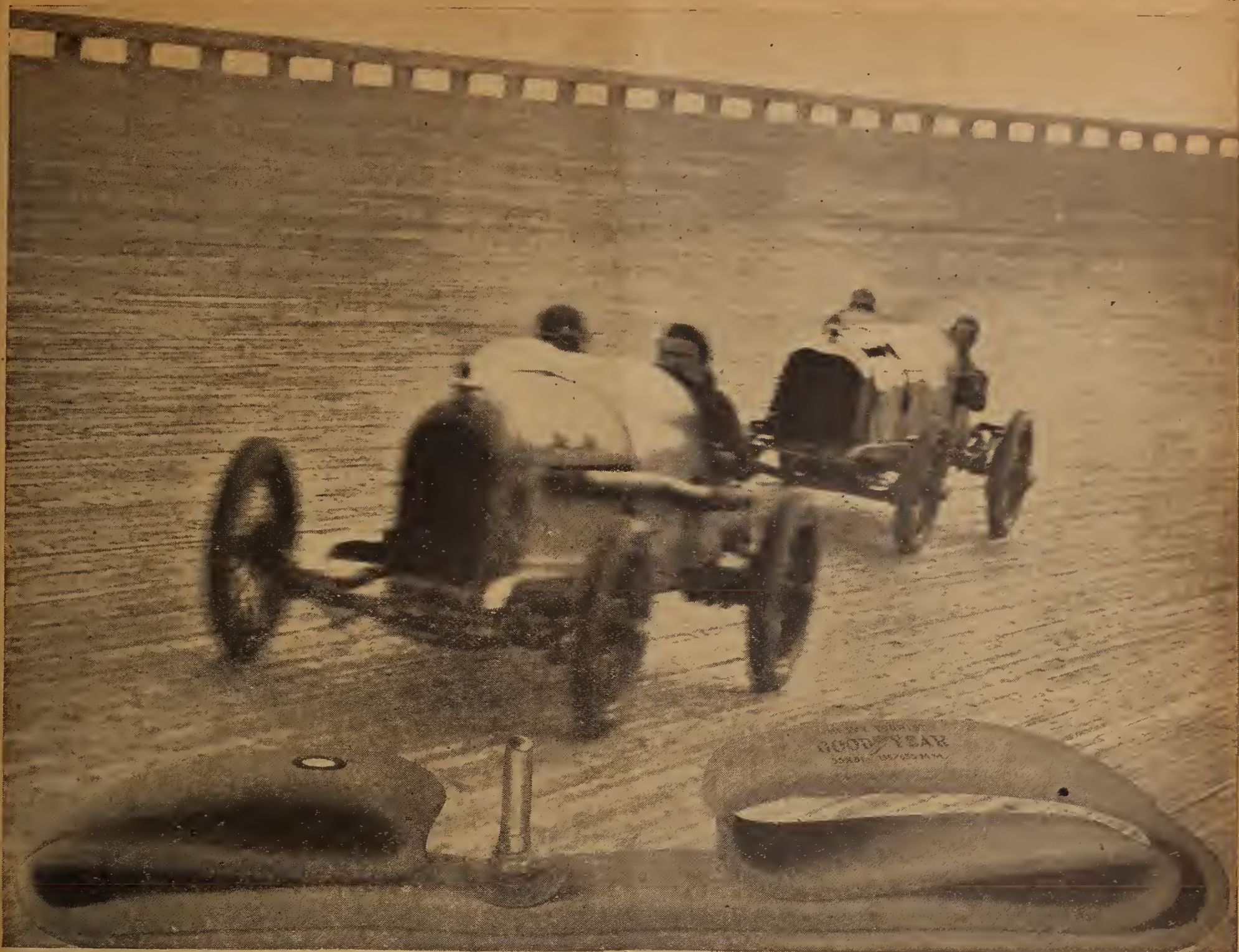
SIXTH—Selection of good heifer calves to replace old or inferior cows.

SEVENTH—Prevention of disease among the breeding herd and the younger stock.

EIGHTH—Shelter sufficient to protect the cattle from both severe cold and extremely hot weather.

NINTH—A practical knowledge of fattening cattle for market.

TENTH—Marketing to advantage.



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Think What Punishment They Stand

HAVE you ever considered how much depends upon the tubes in the tires of a racing car?

No matter how staunch a casing may be, it cannot withstand the punishment inflicted by the track unless the tube, also, is flawless.

During the American racing season of 1919, every important race of fifty miles or more, on speedway and road, was won on Goodyear Cord Tires.

While that is splendid tribute to the Goodyear Cord Tire, it is also proof conclusive of the superior quality of Goodyear Tubes.

As you know, Goodyear Heavy Tourist Tubes, just as the Goodyear Tubes so favored by racers, are made of pure gum strips, *built up layer-upon-layer*.

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GOODYEAR

HEAVY TOURIST TUBES

What the Wood Elf Did

The queer story that Mr. Porcupine told to Mr. Muskrat: the first nettles; how the porcupine got his quills; how the skunk got his stripes

By Frank A. Secord

(Copyright, 1920, by Frank A. Secord)

AMUSKRAT had just finished some work at the edge of a small lake lying in the center of a deep woods. He wished to dry his fur, so he found a sunny spot between two trees and stretched out. After resting a bit and finding that his fur did not dry fast enough to suit him, he stood on his hind legs and rubbed his back with his paws, the while saying to himself, "Whee, this is good!"

The muskrat was watching some hawks soaring above the trees, and wondering how it would feel to be able to fly, when, of a sudden, something made him cry out and he clapped his paws to his sides. He looked this way and that, without seeing anybody to speak of, and while he was doing this, a second hurt made him yell, "Ouch! Ouch!" and then something struck one of the trees with a snap, and the muskrat saw a small quill sticking in the bark. He felt of his side and pulled therefrom a quill exactly like the one in the tree.

"Is somebody shooting me?" Mr. Muskrat asked.

"No," was the answer that came from behind a bush, followed by a laugh, "but if you get in the way you get hit."

Mr. Muskrat dropped to all fours and walked to the spot whence came the voice, and discovered a little animal squatting there.

"So it is you, eh, pig!" cried the muskrat. "I might have known it. Have you nothing better to do than to shoot your arrows at a respectable muskrat, who works for a living and means well all the time?"

"I was shooting at a wasp, who tried to sting me," was the answer. "He lit on the side of the tree, yonder, and I nearly got him. You managed to stop my best shot. By the way, rat, I wish to tell you that I am no pig."

"And I am no rat!" growled the other. "You look like one," said the first, "and that is more than you can say about me—I do not look like a pig."

"You do not, but your name is porcupine, and that word is nearly half 'pork,'" the muskrat insisted. "If I am a muskrat, that's no reason for calling me a rat. Rats cannot swim, and I can."

"And pigs cannot shoot quills," sneered the porcupine, bristling up and looking fierce.

"That is very true," Mr. Muskrat agreed, "and

it is also true that we two have no business sitting here quarreling. While I dry my fur, I wish you'd tell me how you fellows happened to get your arrows."

Now, nobody believes that a porcupine can shoot his quills, and he can't. He often loses some of them, however, when he runs through brush and bramble or gets into an argument with a foe. Sometimes quills become loose enough to fall off. The particular porcupine that is mentioned in this tale sure enough shot his quills, but he did it about as anybody else would have shot the same quills. He got the quills from a brush heap through which he had walked a few moments before, and by sticking a small splinter of wood into the openings managed to fashion very good arrows, which he threw at the wasp.

Mr. Porcupine was very willing, after shying another arrow at the wasp, to tell the muskrat all about himself. Said he, beginning his tale:

"Well, once, long, long ago, porcupines really did have a skin like that of a pig—smooth, with little hair on it. They were not very good fighters, and could but poorly defend themselves when attacked. They were very industrious and worked all the time. While other animals loafed, the porcupines kept at their duties, laying in supplies of food.

"One day a lot of skunks, too lazy to gather their own stores, came to the porcupines and demanded food. They knew they would be refused, and that is exactly what they wished; for, upon being refused, they set out to take what they desired, robbing the porcupines of the last bit of food in their homes.

"Well, the season was growing late and the luckless porcupines saw famine in sight for themselves, if they did not hurry. They bewailed their sad plight, but set out to work faster than ever, only to be robbed once more by the skunks, who had no shame at all.

"The porcupines reported their loss to

the elf of the woods, and he, very angry, called all the skunks to him, accusing them of being thieves.

"We were not within a mile of the porcupines' homes!" the skunks fibbed. "My," said one, "we wouldn't steal a breath of



They met, at the river, a big turtle, to whom they told about being stung by bees and wasps in the weeds

air, even!" The skunk who told this fib crossed his paws over his heart and rolled his eyes as he spoke.

"The elf knew, of course. Everybody knows that the wood elf, who looks after all of us, is wise.

"The elf sat on a weed and rocked himself a while, deep in thought, and then he bade the porcupines go home, telling them that on their way they were to pause at a pool which they all knew, gaze into its waters, and say, as they did so:

"This magic pool we're told to scan,
To try to find out, if we can,
How porcupines may save their food
That they have gathered in the wood."

"As the animals repeated the words, many voices cried, 'Sure!' and a band of skunks rushed upon them, driving them away.

"The skunks waited until the porcupines reached home, and then they ran to commit another robbery. As they approached the spot they found a lot of green weeds growing there that they had not seen before. They cared little about a few weeds, however, so they pushed through these, but before they cleared the weeds every skunk cried out with pain and turned tail to get away. To the river they ran and into the water and mud they plunged."

"What happened?" Mr. Muskrat inquired, interrupting the porcupine's tale.

"Why, the elf of the woods caused the first nettles of the world to grow near the home of the porcupines—that's all. The skunks thought that the weeds had wasps on them, and that they were stung by the insects.

"The porcupines laughed and were happy, for they felt that they would be bothered no more. Mr. Muskrat, what

do you think the skunks did? They met, at the river, a big turtle, to whom they told about being stung by bees and wasps in the weeds. The turtle did not know that the skunks were on a thieving trip when they were hurt, so he offered to go with them to investigate.

"Well, that very night the porcupines were called from their beds to give up their food. The turtle, thinking it fun to run through the nettles, trampled them down so the skunks could get through. Of course, the turtle, having a hard shell, was not stung.

"The skunks held clamshells in front of their faces, as they came, to make sure that no flying bit of nettle would strike them, and in this manner they dashed against their helpless victims.

"Later the elf came to see how matters stood, and he was told of the latest mischief of the skunks. He said nothing, but he rounded up the skunks, who still denied being thieves, but even as they spoke they licked their chops, which were covered with bits of stolen food.

"If you did not steal the porcupines' food, you are not to blame for their troubles," said the elf, "so go about your business, but have a care!"

"The skunks vowed that they could not steal the food of the dear porcupines, wept tears of sorrow because they were accused, and then went slowly away, the wood elf watching them out of the corners of his eyes.

"The elf called the porcupines to him. Said he, 'When you leave me, pass the pool again, but all you need do is to look into it and say, "Elf."'

"The animals did as they were told, and when they arrived at their homes they found that they no longer had smooth skin with few hairs on it, but that they had many stickers—quills—and that they could make these bristle up and even shoot when they wished. The porcupines laughed, for they saw at once that they could take care of themselves against any thieves who might come.

"Ha, ha! Ho, ho!" laughed the storyteller, and he kept on laughing so hard that he couldn't go on with his tale, and Mr. Muskrat, impatient, begged to hear the rest.

"The skunks came again," continued the porcupine. "They carried the clamshells in front of them, as before, and therefore they could not see ahead. They did not know that the porcupines were lined up in front of their homes, ready to give battle.

"Who—ee!" yelled the skunks, as they ran.

"We see!" answered the porcupines, shooting thousands of quills at the thieves. The quills peppered the skunks, who cried loudly that they were being murdered. They dropped the clamshells in their haste to get away from there, and as they did so the quills struck them in the face, on their sides, backs, tails—in fact, the quills struck the thieves just where the elf wished them to strike, as I will show you in a moment.

"With the porcupines laughing and making all manner of fun of them, the skunks ran, glad enough of the chance to escape. They sought to hide in a little cave near the river, where they always kept their food; but just as they were about to enter the cave the elf of the woods faced them. He waved a hand toward the guilty animals, frowned, stamped his foot, and cried in a voice loud enough to be heard a mile distant: 'Thieves! Fibbers! Sneaks! You have your just dues! How does it feel to have stickers all over your bodies?'

"Dear Elf," the skunks moaned, "we were playing with some rabbits in the woods and ran into a patch of sand burs. When we tried to scrape them off by running through the weeds, the burs fell off, but the stickers remained."

"Are you sure?" the elf asked.

"Honest!"

"The wood elf [CONTINUED ON PAGE 43]



At last the elf cried, "Go!" and the robbers hurried away, glad to escape with their lives!

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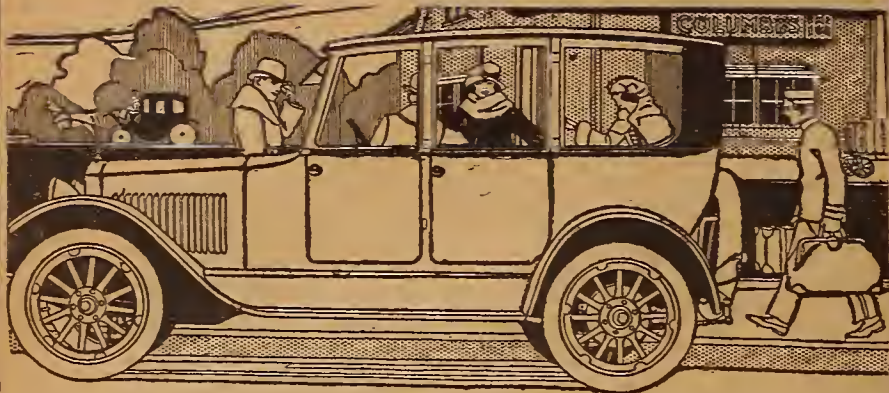
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Items to Watch in Feeding and Breeding Livestock Now

By John R. Mohler

Chief, Bureau of Animal Industry, United States Department of Agriculture

(Written especially for Farm and Fireside)

CONDITIONS in livestock-raising as they existed before the war have passed into history. Costs of production have greatly increased, and the value of the finished product also has advanced as a necessary sequence. While this general trend applies to a multitude of other commodities, problems of profitable cattle production are among the most difficult to be met, owing to the length of time involved in producing a marketable product.

In some parts of the country, especially in the range areas, some calves born before the United States entered the war are only now reaching a satisfactory market size, and in many cases heifers from dairy cows bred under peace-time conditions are just beginning to produce milk. Consequently, in looking ahead for another cattle generation, it is highly desirable for producers to have as definite facts as possible on which to construct their plans.

Information on the cattle industry in some foreign countries lacks dependability, owing to the absence of statistics. But, roughly speaking, the world this year probably contains about 475,000,000 cattle over yearling age. Of that number the United States has on farms, 67,866,000. This is approximately one seventh of the cattle in the world, and causes the United States to rank second to India, which at the last count had about 140,000,000—by far the most cattle of any country in the world. Nations next in importance to the United States in cattle from the standpoint of numbers are Russia (in Europe), Brazil, and Argentina, in the order named.

FROM figures based on several thousand volumes of statistics and reports it appears that both beef and dairy production over long periods have made greatest growth in countries where feeds and pastures were abundant. These countries include the United States, Canada, Argentina, Uruguay, Russia, Australia, and New Zealand. In the countries of western and northern Europe comparatively small increases in numbers of cattle have occurred within the last half-century. These conditions include the United Kingdom, France, Holland, Denmark, Norway, Sweden, Finland, and Switzerland. The countries named grow limited quantities of feed, and many of them import large amounts of concentrates. Denmark, for instance, imports normally about 600,000 tons of oil cake a year.

Experience in those countries also shows that limited feed is the cause of the gradual replacement of beef animals by dairy cows, which leads to the conclusion that under such conditions dairying is more profitable. More than that, limited feed leads to improvement of dairy cows in countries which are progressive. The average production of Danish cows, for instance, is about 6,000 pounds of milk annually, compared with approximately 4,000 pounds per cow in the United States. From these facts the reader will observe that two general conditions prevail.

The cattle countries of South America show noteworthy development in the quantity of meat production, while those of western Europe, which is the world's great import market for food, are excelling in the efficiency of dairy production. I may add that South America also has been consistently importing breeding animals of beef breeds, increasing the acreage of improved pasturage, and in other ways building up a cattle business along strictly modern lines.

The principles of good livestock-raising are well known in all progressive countries, and the success of the industry depends on the extent to which this knowledge is applied and consistently used. Furthermore, marketing conditions are most satisfactory where there is a liberal volume of production, so it is clearly in the interests of every cattle raiser in the country to consider the importance of the industry from a national point of view. Individual benefits are closely related to the establishment and maintenance of sound national policies.



John R. Mohler

Judging from reports recently made by representatives of the Department of Agriculture who have been in western Europe, and some others who are still there, the damage to herds of Great Britain and France will be largely repaired within a few years. An unusually large number of young stock was observed by the Department men as early as April and May of this year.

The United Kingdom does not intend to permit importations of cattle; but, on the other hand, expect to export stock to Belgium, France, and Serbia. France is importing several thousand breeding cattle from the United States, and from present indications will continue to make additional purchases until her agricultural resources are improved. But from the best information obtainable western Europe will import meat and dairy products more extensively than live animals, and the importations will be made from countries able to furnish the desired quality at lowest cost.

The future of our export trade in cattle products necessarily is largely a conjecture. During the last four years our exports of beef have been unusually large. Europe was forced to trade with us through shortage of ocean tonnage. We must remember, however, that before the war beef imports of the United States greatly exceeded beef exports. In 1914 this country was importing at the rate of about eight tons of fresh beef and veal for every ton exported.

In dairy products, especially condensed milk, our exports increased enormously during the war, but at their maximum they represented only about two per cent of our total dairy production.

From such facts and figures it is plain that in supplying and developing domestic markets cattle raisers have their greatest opportunity. In the aggregate, more meat by far is eaten in the United States than in any other country in the world. The per capita consumption of meat in Australia, New Zealand, and Argentina is recorded as exceeding that of the United States, but in those countries meat is plentiful and comparatively cheap food. However, notwithstanding the high prices at which beef has been selling in this country, its consumption last year averaged 66.74 pounds for every person, a figure nearly eight pounds more than in 1914.

Those engaged in the production of beef and dairy products, may draw a number of inferences from the facts presented. Among the most important points are the following:

Events of the last five years point to the great importance of feed as a basis of the cattle industry, whose growth proceeds regularly only where feed is plentiful. On the skill with which American cattle owners handle the feed question will depend much of their success and profit.

Cattle production with scrub stock is obsolete and a person who continues to use scrub animals, particularly scrub sires, will find himself unable to compete with cattlemen whose herds are headed by pure-bred sires of individual merit.

Greater Efficiency in Production

Every cattle raiser may wisely study the principles of breeding so that animals will reach market age as quickly as possible. Quick maturity corresponds to the so-called "turn-over" of business.

It is highly desirable—in fact, necessary—to stop the drain of disease on the cattle industry. Successful methods of preventing and eradicating most of the important livestock diseases are now well established.

There is a powerful sentiment among consumers to reduce the cost of food commodities. The result of such sentiment is likely to include thorough scrutiny of every factor entering into the final value of foods. The cattle industry needs to prove itself efficient rather than wasteful, progressive rather than at a standstill or going backward.



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Union Carbide brings city lighting and cooking convenience to half a million American farm homes. Some of these better lighted houses must be near your own farm.

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Photo by Chas. J. Belden, Pitchfork, Wyoming
A "dressed" lamb for dinner!

Spring Overcoats for Lambs

MAYBE there's a hunch for some of you sheep men in the coat which the lamb is wearing. A large Western rancher uses these "top coats" to protect his new-born lambs from the chills of early spring nights and northerners. Sheep mothers may shy at them at first, but soon become accustomed to seeing their offspring "dressed up," and some say they even like them better for their Easter clothes. It is always preferable to provide shelter for young lambs and their mothers in bad weather, but when this is not possible such protection as is shown above might be the means of saving a goodly number of lambs.

S. R. B.

Does Your Cow Feed Earn What It Costs?

THREE or four years as a cow tester and some experience of my own have about convinced me that the feed that a good many of us buy is costing us too much. Goodness knows that it is all high enough, but to pay an excessively high price is a mistake, and that is what I would like you to think about.

The roughage problem is individual with the farm that you are on. Protein may be an individual problem too, but not very often. The protein that you buy is what I want you to consider.

If you are feeding silage, very likely you are using some sort of a concentrate. What does it analyze? What does each unit of that protein cost you? How much "filler" are you paying for? The average concentrate is probably about 22 per cent protein. Some are lower than that, and a few run higher. But the important thing to figure out is what each per cent or unit of protein is costing you. You can do this easily in five minutes or even less.

I don't want to discourage feeding prepared dairy feeds or cow feeds of any kind, but I do want to discourage feeding as a matter of guesswork. Lots of dairymen are feeding "Blinker's Milker," and maybe you are feeding it too. It may be a good feed. It may be worth all its costs. But do you know what it contains, or that it is profitable? That is the point that ought to be first, I think.

I met a man the other day with a good herd of Jerseys, who bought most all his grain in sacks from a dairy-feed company.

The cows were on grass, but he fed them while milking. I asked him what the feed cost, and he didn't know. I asked him what it analyzed, and he didn't know that either.

Sometimes I think we farmers are fast asleep. I suppose I am doing just as fool things as the rest, but here is one place where I am waking up. Do you look at the tags on your feed sacks? And do you watch your feed cost? And how do your cream or milk checks show up?

There are lots of good feeds, but there are some that aren't. It will pay you to find out why some are better than others. While protein is not the whole idea in a concentrate, yet it is the big one. An appetizer may be of value, and some feeds have this. But can't you get the appetizer cheaper some other way?

For the man who is feeding for some other fellow, and who doesn't have to think in terms of profit, the prepared dairy feed is a blessing. He takes it as it comes, and doesn't care about how economical it is. But most of us do have to watch costs, and need to know what we are feeding, and why.

E. R.

EDITOR'S NOTE: The tags should tell the analysis of a feed. If they don't, and you can't get a statement from your dealer as to its composition, don't buy it. Your county agent will gladly advise you as to what feeds to buy, and will tell you the things you want to know about feeding animals. If you haven't a county agent, write to H. H. Kildee, care FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

Do We Give You What You Want?

EVERY once in a while we wonder whether you find the things in FARM AND FIRESIDE that you want to see talked about.

The only way we can know for sure that FARM AND FIRESIDE is interesting and useful to you as a practical farmer, is to ask, and we hope that you will let us know.

Do drop us a card or a letter stating the hardest problem you have to solve on your farm, that you think we could help with the right kind of article. Is it marketing, or management, or cost-finding, or finance, or bringing the children up to be happy and successful farming folks; or is it machinery, livestock, cropping methods, or labor—and what particular phase of each particular subject is troubling you most?

If enough of you answer this inquiry, we will have a great deal of valuable information to go on in trying to find out for you the things you want to know.

THE EDITOR.

Try This Stump Puller 30 Days FREE

Don't Send Any Money! Prove all my claims on your own stumps—at my risk. See how ONE MAN ALONE with a Kirstin pulls big, little, green, rotten, low cut, tap root stumps—also trees, hedges or brush. Does it Quick!—Cheap!—Easy! If satisfied, keep the puller. If not, return at my expense. No risk to you. Six mos. to pay.

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Book tells why the Kirstin Way reduces land clearing cost to the lowest figure ever known! Filled with valuable land clearing facts. Also get Special Agent's Proposition. Write for it today.

Kirstin ONE MAN STUMP PULLER

Weights less—costs less. Has greater power, speed, strength. Lasts longer. Guaranteed against breakage. A few pounds on handle exerts tons on stump. Single, double, triple power! Wonderful success! The FREE Book shows One Man and Horse Power Models. Also Special Agent's Proposition. Write today.

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(65)



General Motors Trucks

The Trucks That Get There and Back

Getting your product where you want it and getting back again are the main things so far as a truck is concerned.

A good deal may be said about the machinery of a truck, but what you want after all is *to get there and back*.

GMC Trucks do that very thing in a way that makes long explanations unnecessary. In other words GMC Trucks are noted for keeping out of the repair shop.

Aside from hauling livestock, produce or grain to market, there is plenty of work for a truck to make it pay on the average farm.

But above all, a truck that can be depended on is most important.

GMC Trucks are built by the exclusive truck making unit of the General Motors Corporation.

Ask us for a Free Copy of Our Book "F," "Motor Trucks on the Farm."

GENERAL MOTORS TRUCK COMPANY
PONTIAC, MICHIGAN, U. S. A.

Branches and Distributors in Principal Cities



Don't Trust Entirely to the Lord to Make Your Pastures Grow

[CONTINUED FROM PAGE 18]

view of meeting every prevailing condition. Timothy and blue grass were included in a body, redtop was added for the low wet places, awnless brome grass for the dry places, and meadow fescue, Rhode Island bent, orchard grass, and Italian rye grass were added to furnish a succession of grasses. Clovers were also divided almost equally in this case between red clover, alsike, and white clover, which was much cheaper at that time than at present.

Thirty pounds of the mixture was seeded to the acre, or at least 30 pounds was planned, but the machine ran about 35 pounds. When I was a boy I had got a sound thrashing because I had sowed a three-cornered field to timothy and clover only one way with a wheelbarrow drill, and had skipped little diamond-shaped spaces across the middle of the field. These spots, where weeds thrived, were in a place where everyone who drove by could see them, and my dad didn't like it very much. So these fields were very properly sowed both ways. My lesson had been carefully taught. The seed was divided into two parts, and each part sowed a different way.

To-day I realize fully the wisdom of uniform seeding. After sowing, the seeds were worked into the surface soil with a spike-tooth harrow set back at about 45 degrees, after which the surface was well compacted with a heavy T-bar roller.

It is my opinion that these pastures are to-day carrying four times as many animals as the native pastures of the vicinity, and they will continue to do so if maintained by an occasional application of lime, a top-dressing of manure or properly balanced fertilizer every two or three years, and by seeding on the surface every third or fifth year, as conditions warrant. The seed should be sowed in spring when the ground is honeycombed.

My observations lead me to believe that pastures generally fall into three or four classes, according to the character of the land. First, there are the flats along brooks, streams, and rivers. Most of these are systematically maintained by spring flows which deposit upon them much fine sediment containing plant food. Such pastures seem to require little care. Sometimes it is necessary to cut the brush which grows up in most of them.

OF COURSE, too much grazing is harmful, but not as serious as it is in upland pastures, because the spring sediment fills the hoof marks, covers the grass a little, and seems to protect the plants. Some of these pastures are the richest in the world, especially in cases where the streams flow through a limestone region.

Second, there are upland pastures badly in need of improvement which may be plowed. These are similar to the pastures discussed above. It is costly to-day to improve them, but when it is considered that the improvement is a matter of years, and that one or two crops may be obtained in the course of working and fitting, there is no question of the advisability.

My experience and observation show that it is generally best to fall-plow such fields, follow with corn or some cultivated crop, and then seed down after buckwheat

or with oats. In every case a liberal application of lime is necessary. I would not except limestone soils. Manure or fertilizer worked into the soil and a liberal seeding are essential.

Third, many pastures are so situated, or so rough and stony, that plowing is impossible. Such pastures may be materially improved by liming at any convenient season of the year, and harrowing five or six times in spring as soon as the ground is fit to go upon with a team, and then sowing 300 or 400 pounds of fertilizer containing available nitrogen and phosphoric acid. After seeding, they should be harrowed and, if possible, rolled. On such pastures the seeding should be repeated every year for three years, using about 15 or 20 pounds the second and third years.

Fourth, and worst, are the pastures which for geological and physical reasons are not capable of plowing or harrowing. Lime, fertilizer, and seed are here again essential. The lime may be applied in fall after corn is in the shock and heavy work has ceased, the fertilizer in spring, and the seed just at the time when the ground is honeycombed and the frost is coming out of it. In this case, too, the seeding should be repeated for three successive years.

BESIDES the material, such as lime, fertilizer, and seed, necessary for pasture improvement, provision must be made for the maintenance of the animals, of whatever kind they may be, during the process of improving the pasture lot. A pasture may be run-down and yet produce considerable roughage. A way must be found to produce this roughage if the same number of animals are to be maintained. The summer silo has been mentioned. It is an excellent means where it is at hand, but few men have additional silos for summer use, and still fewer have silos sufficiently large to carry them through the lean spells of summer. Supplemental forage crops are probably the most economical means, in the absence of a summer silo, of producing summer succulence. By the proper manipulation of rye, wheat, alfalfa, clover, oats and peas, millet, corn, soy beans, and cowpeas, it is possible to grow succulence in abundance for any season of the year.

In the discourse above, the maintenance of fertility and the matter of reseedling are discussed to some extent. Little, if anything, has been said regarding the problem of limiting grazing. Plants without leaves are like a windmill on a clear day with no wind. It stands to reason that plants with the leaves eaten off to the ground, and only the crowns and roots left, are almost helpless. They have a hard struggle to eke out an existence, because they have no means of absorbing moisture and plant food. In the older countries of Europe, the Isle of Guernsey and the Isle of Jersey, this problem has been solved by staking animals out, and by movable fences or so-called hurdles. In this country, with expensive labor, the problem may be solved in an economical manner by dividing the present pastures, and by the use of a greater number of supplemental forage crops. They should have a good growth for winter, and should not be pastured too early in spring.

A Few Words About Mr. Voorhees

THE Voorhees family seem just naturally to take to farming like bumble bees take to clover.

Nearly everybody has heard of Edward B. Voorhees, who was for many years director of the New Jersey Agricultural Station, and professor of Agriculture at Rutgers College. He wrote the well-known text "Fertilizers," which has been a standard treatise on this subject for many years. Then there is C. T. Voorhees, who has been prominent in animal and insect studies, and who is a professor in the University of Arizona.

E. C. Voorhees is a livestock expert and assistant professor at the University of California. John H. Voorhees, the author of this article, is assistant extension professor in Farm Crops at the New York State College of Agriculture. He is a graduate of that institution, and took part in various athletics and activities there. He worked two years in New York City, and then the call of the land took him back to the New Jersey Agricultural Experiment Station.

After that he operated a large farm for himself in northern New Jersey. So you see he has been through the mill of practical as well as theoretical farming, and knows what he is talking about. We don't know whether all the Voorheeses are related or not. They seem to differ on the way of spelling their names, but I think you will agree that they are all doing a lot to help boost along the good cause of the American farmer.

THE EDITOR.



How Many Miles From a Tire?

Do you know what mileage you get from a tire?

Do you know what mileage modern tires should give?

If not, get a Miller Tire. Watch the mileage. Compare it with the tires you use. It may change your whole idea on tires.

Twice Better

Miller experts, in the past few years, have almost doubled our tire mileage.

In our factory tests, which are extreme, we average 15,000 miles on Miller Cords, and 8,000 to 9,000 miles on Miller Fabric Tires.

50% More Miles

Green & Swett Co. of Boston made hundreds of comparisons on big cars. They found that tire users, by adopting Millers, increased their tire mileage from 50% to 75%. And they eliminated blowouts.

Countless users, even on trucks, report 20,000 to 25,000 miles.

Many large users are making million-mile comparisons between all leading makes and Millers. And Miller Tires are winning.

Make One Test

A Miller Tire will show the maximum mileage under your conditions.

The mileage will depend on size, on load, on road and care. But you will learn what you

should get on your car, and it may surprise you.

You will find that the tread outlasts the tire.

You will find Miller Tires uniform. Every tire is signed by maker and inspector. Both are penalized if a tire falls down.

New-Day Tires

Millers are the new-day tires. We have spent ten years perfecting them.

In six years the demand has multiplied ten-fold. Last year alone it increased \$11,000,000. Just because of the extra mileage Miller users get.

You should know these tires. They are saving millions of dollars to tire users. They are showing that defects can be avoided, and that tires can be dependable.

Test a Miller Tire.

If you buy a new car, insist on Miller Tires. Twenty makers now supply them without extra cost.

THE MILLER RUBBER CO.
Akron, Ohio

Tread Patented

Center tread smooth with suction cup, for firm hold on wet asphalt. Geared-to-the-Road side treads mesh like cogs in dirt.



Miller Tires

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Geared-to-the-Road

Registered U.S. Patent Office

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Get a WITTE

I will ship you any style WITTE—2, 3, 4, 6, 8, 12, 16, 22 or 30 H.P.—Stationary, Portable, Saw Rig—or a Lever Control Drag Saw on short notice. Cash or Easy Terms. Tell me WHAT you want and WHEN. Latest improvements—lower prices. Anything you want in the Engine line.

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Write for prices on all styles WITTE, with BOSCH Standard Magneto. It's High-Tension—the only successful ignition for kerosene. Hot spark—sure fire—easy to operate. Lowest priced H. T. Ignition Engine. Sold Direct—Big Saving—Quick Service. Full information by return mail. ED. H. WITTE, Pres.

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Essex Almost Doubles Light Car Endurance

*Essex Has Performance Like the Costliest Fine Cars—
Its World Endurance Record Has Never Been Rivaled*

The most important thing that Essex has proved is that weight and size are no longer necessary to finest car quality.

All concede average ability in any modern car.

So it was to prove ability far beyond what any light car ever has shown that Essex made its famous endurance tests.

Its 3037 miles in 50 hours is a world's endurance record. The test was official. Supervisors of the A. A. A. certified the Essex stock chassis in every detail.

Such Endurance as You Want in Your Car

Never before was a car driven at top speed for 50 hours. The grind was more severe than years of road use. Yet at the end the Essex showed no measurable wear.

What car, the Essex size and weight, can even attain a mile-a-minute speed, much less keep it up for 50 hours?

These results were decisive. They proved Essex not only the supreme performer of the light car field. They showed that with its advantages of moderate price and economy it combines such endurance and dependability as few large, high priced cars offer.

Light Car Economy and Big Car Performance

Greater size could add nothing to Essex. It has the qualities which weight and size are built to give—riding comfort, solidness, distinction and smooth, quiet pace. In addition it has fuel; oil and tire economy. And its durability means freedom from repair costs and positive, dependable transportation.

It is comparable to no other light car. And for a car that might give you the speed, power, durability and

luxury of the Essex you must pay far more. Nor would you, even then, get the Essex advantages of low upkeep, tire and gasoline economy, which result from its light weight.

You may rarely utilize its over-capacity. But you do want the ability and dependability it gives. It means no strains on motor or other mechanism. It means a better, more durable, lasting car.

The Essex is easy to operate. Driving does not fatigue. Its instant response to the lightest touch and its smooth, restful comfort in motion account for this.

That is another reason why so many women are Essex owners. And they appreciate its safety, too. Its controls are simple and instantaneous. It makes fast time, with security, in difficult traffic.

Essex Wins on Quality Minus Useless Weight

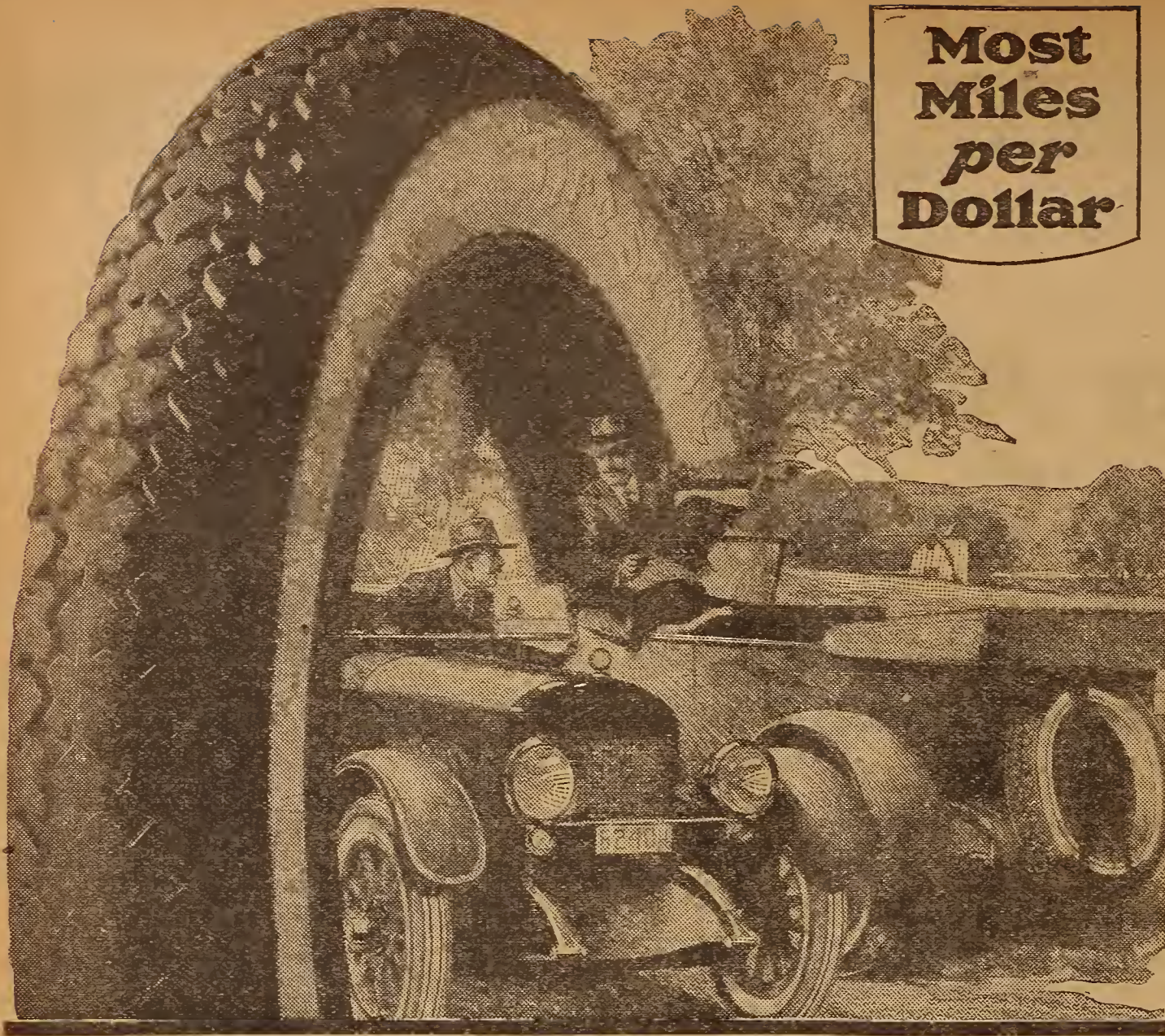
Essex won recognition on the finest quality without useless weight and size. That issue is uppermost today.

You will take pride in your Essex from the first. Its smartness, its rich fittings and finishing, its quiet luxury and superior performance give it distinction everywhere. And time and use will increase your esteem and respect for it. You will come to rely absolutely on its dependability. You will expect and find it always ready for any demands you may make.

These are the reasons why Essex set a world's sales record in its first year. And orders now are so far ahead it is certain that even that unrivaled mark will be surpassed this year.

Thousands, realizing this, are placing their orders now. We advise that you do likewise, else you may be disappointed in delivery.

Essex Motors, Detroit, U. S. A.



**Most
Miles
per
Dollar**

Part of the "Good Roads" Program

WHEREVER men and cars meet, "good roads" is pretty sure to be discussed.

You want good roads chiefly because they improve farm conditions, facilitate the use of car and truck, and because they will increase the life of car and tires.

The Firestone cord is part of the program because it gives you most miles per dollar. It is the tire that led the industry with the new standard over-size last year. It has made good as "the best buy" in tires, because of its unequalled performance records.

The new standard over-size means more rubber and cord, more air space, better riding, better traction, and much more mileage.

Firestone cord tires are made by workers financially interested in the business as holders of its common stock. They form a practical industrial community; dedicated to low cost transportation—the most for the money in tires.

Get your share of these savings by having your dealer put Firestones on all four wheels.

FIRESTONE TIRE & RUBBER CO., Firestone Park, Akron, Ohio
Branches and Dealers Everywhere

Firestone

RADIUM DIAL MILITARY STRAP WATCH for BOYS



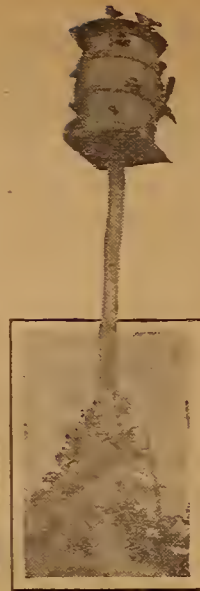
Swiss Movement
Heavily Nickered Case

I want to give one of these dandy strap watches to every live American boy who is willing to do a little easy work. Are you that kind of a boy? If you are, one of these watches is already as good as yours. You surely will be well pleased with it. It keeps good time and can stand hard every-day usage. In fact, it is just the kind of a watch our soldier-boys wore in the trenches. The radium dial enables you to see the time clearly in the dark. Write today for my easy plan. A post-card will do.

Address

D. S. Stephens, 150 W. High St., Springfield, O.

Barrels of Birds



I KNOW of no bird-house that will get better results than a barrel martin box such as the one shown in the accompanying photograph.

I put up one of these in Oklahoma that had compartments for twenty-four nests. Within an hour after putting it up one pair of martins moved in, and the first year eight or ten pairs nested in it. The next year the barrel was full. Twenty-four pairs of martins and two brood of young to each pair! Imagine how many insects they destroyed during the season, and how many hawks were escorted to a safe distance by an angry host of martins!

The barrel shown in the photograph has only sixteen compartments, but at least twelve of them are occupied by martins, and this is the first season for this house. Bluebirds nested in one compartment and English sparrows in another, though the latter finally met violent deaths.

Such a martin house should be erected on a pole fifteen feet above the ground in an open place. Martins do not like anything close to their house. They feel safe, I guess, with nothing near which could conceal an enemy.

In constructing this birdhouse, as well as all others, make the openings round and of a size just large enough to admit the birds for which it is intended. Two-inch holes are just the right size for martins. Also make the entrances above the middle of the compartment and not at the bottom, a mistake very often made. Birds want room for their nest below the entrance, not above it. Nothing will give you more pleasure than having a colony of martins in your yard.

L. WALTER SHERMAN, Ohio.

How Co-operation Saved Us Our Crops

[CONTINUED FROM PAGE 11]

totally unfit for food. Partially frosted fruit is very deceiving.

So, that they may be certain their customers get nothing but good fruit, the growers use a water separator which culls out all the frozen and partially frozen.

This machine was invented by Frank Chase of Riverside, California, and perfected by George D. Parker of the same city. Mr. Chase, who is himself a fruit grower, got the idea in 1913, when, in dumping some frozen oranges into an irrigation canal, he noticed that the fruit most severely damaged came to the surface first.

Upon this simple application of the principle of gravitation the machine was built. They are installed in the packing houses, and all fruit from frost-visited groves is run through them. A conveyor carries the fruit to the separator, where it is dumped into a swift current of water that is kept in constant agitation by two propellers. The fruit that is entirely damaged, being lightest, comes to the surface first, and is carried over a screen set high in the water. A second screen, set lower and farther back, catches the partially damaged fruit, while the marketable fruit rolls along on the bottom. An alcohol separator is used for lemons.

Although the members of the California Fruit Growers' Exchange, and the majority of the independent houses, took these measures to protect the consumer, there were a few speculators who endeavored to make a dishonest dollar by shipping frozen fruit. To catch these, the growers co-operated with the federal and state food inspectors, and it is doubtful if any damaged fruit got on the market. Several cars were condemned before they got out of the State, and some were seized at various points in the East.

The Government evinced its interest in the question of frost protection by sending Mr. Young, of the Weather Bureau, to the Pomona Valley to study the subject. Mr. Young has spent two seasons here, and has already acquired much valuable data.

For instance, he has developed a formula by which he is able to predict, at five o'clock the evening before, within two degrees of what the temperature will be at five o'clock the following morning.

TIRES 1/3 LESS

Perfect, new tires, all sizes, non-skid or plain, fabric or cord. Prepaid on approval. 8000 to 10,000 Miles Guaranteed

30,000 Customers. Catalog Free. Agents Wanted.

Service Auto Equipment Corporation
929 Service Bldg., Kansas City, Mo.

BE AN EXPERT

Auto and Tractor Mechanic
Earn \$100 to \$400 a Month

Young man, are you mechanically inclined? Come to the Sweeney School. Learn to be an expert. I teach with tools not books. Do the work yourself, that's the secret of the SWEENEY SYSTEM

of practical training by which 5,000 soldiers were trained for U. S. Government and over 20,000 expert mechanics. Learn in a few weeks; no previous experience necessary.

FREE Write today for illustrated free catalog showing hundreds of pictures men working in new Million Dollar Trade School.

LEARN A TRADE

Sweeney

SCHOOL OF AUTO-TRACTOR-AVIATION
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Steels

Make the Maxwell Thrifty

SEVERAL million dollars have been expended to provide more elegance, more refinement, more comfort to the current Maxwells.

It is in ever so many ways a superior appearing car; superior, too, in action.

But not a single pound of weight has been added to burden the work of its great engine!

Therefore, despite the many processes of improvement, it doesn't cost a penny more to run a Maxwell than it did a year ago.

The underlying principle of every Maxwell is to give economic transportation.

This means light weight.

But it means strong steels, as well.

It is no easy trick to provide both lightness and strength in metal.

Such a rare combination means high cost steels.

And you would find, if you compared a Maxwell with *any* car, that it equaled that car pound for pound in fine metals.

How such steels affect your pocketbook is obvious.

1. They are light in weight and hence give more mileage on a gallon of gasoline.

2. As they are fine steels they give long and *uninterrupted* wear.

Which are but two of many reasons for that definite tendency of world-wide friendship towards Maxwell.

In six years nearly 400,000 have found their answer to the motor car question in a Maxwell.

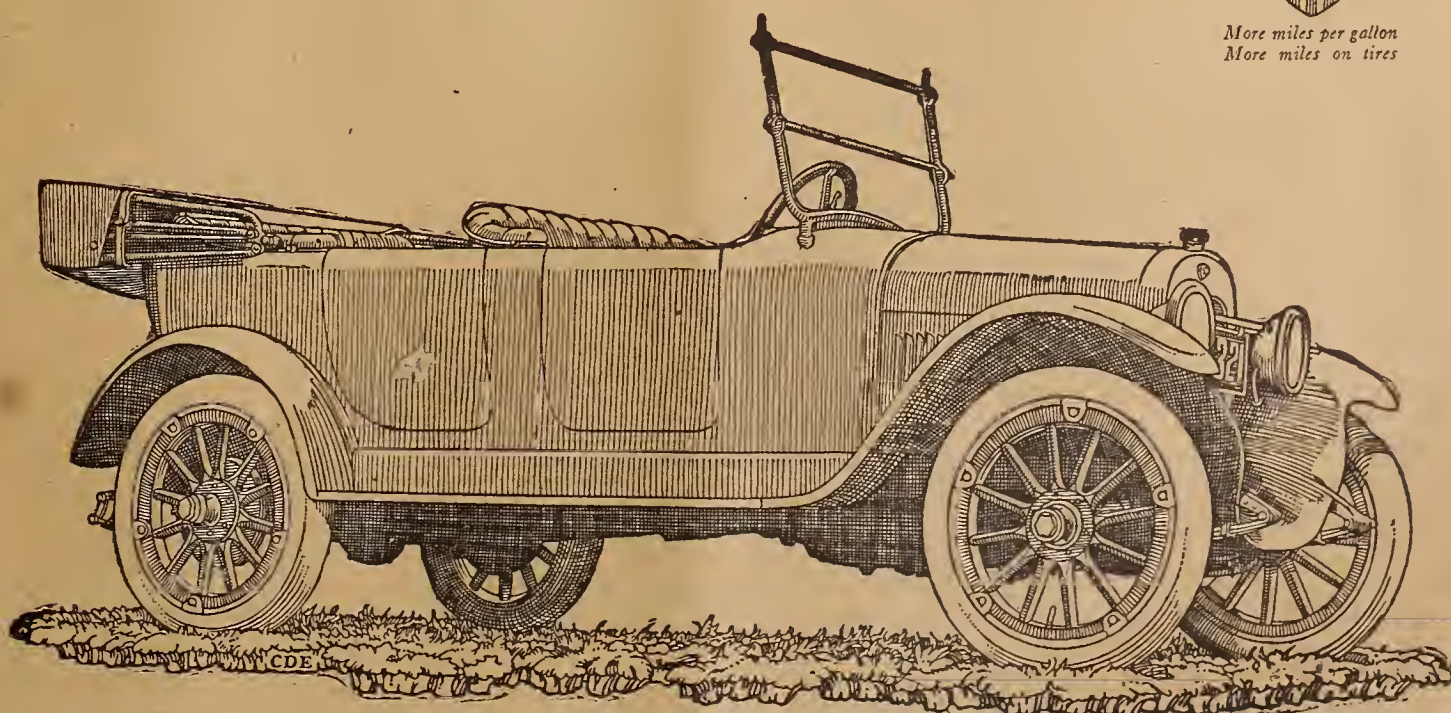
This year 100,000 Maxwells are being produced.

This will supply but 60% of the demand.

MAXWELL MOTOR COMPANY, Inc.
DETROIT, MICHIGAN



More miles per gallon
More miles on tires





On the Road to Better Profits

This is the road to better profits—the Highway of prosperity.

It's beginning is on the farm—your farm; it's end is your best market, the place where highest prices are paid and greatest profits are possible.

Quite naturally, on this road we find the motor truck, for the truck has become the symbol of prosperity on the farm.

Naturally too, we see the Federal very often on this highway, for Federals during the past ten years have demonstrated to the American farmer and business man the superior dependability and economy of a "Federal on the Farm."

FEDERAL MOTOR TRUCK CO., DETROIT

"Shorten the Miles to Your Market"

Another

FEDERAL

One to Five Ton Capacities

What a Good Sire Means in Dollars and Cents

By W. M. Regan

THE best way to measure a bull's influence on his breed is to determine whether his daughters have been better or poorer producers of milk and butterfat than were their dams.

The Dairy Department of the New Jersey Agricultural Experiment Station is analyzing the Advanced Register records that it supervises, in order to determine whether the sires of cows tested have been an influence for the betterment or detriment of the breed. The exact amount of each sire's influence is also determined.

Ne Plus Ultra 15265, it was found, stood at the head of the list of Guernsey sires for the year ending July 1, 1919. The production of his daughters completing their records during the year averaged 25 per cent higher than the best records of their dams. When his entire list of tested daughters is considered, the comparison is even more striking. Seventeen of his daughters that have been entered in the Advanced Register also have dams with Advanced Register records. When allowance is made for under-age records, the average yearly butterfat production of seventeen daughters is 706 pounds, while the average of the seventeen dams is 553 pounds; this is an increase of 153 pounds of butterfat, or 27 per cent.

Sometimes when we see the offspring of a bull enjoying the popularity and bringing the prices that the sons and daughters of Ne Plus Ultra 15265 are, we wonder whether this popularity is based on fact, or whether it is just one of those passing fads, with no real foundation, with which the livestock industry has been afflicted from time to time.

New Jersey produces annually 100,000,000 gallons of milk, valued at approximately \$30,000,000. If every dairy sire used in the State should increase the production of his daughters over their dams

by the same percentage that Ne Plus Ultra 15265 did, it would mean an annual increase of 27,000,000 gallons of milk, with a value of about \$7,000,000.

The above figures tell only a very small part of the story. Ne Plus Ultra 15265 was bred to cows of high-producing ability. This is shown by the fact that the seventeen dams mentioned averaged, on the basis of mature cows, 553 pounds of butterfat per year. If every sire used in the State had the same ability to sire production as Ne Plus Ultra 15265 had, the increase in value of dairy products would be greatly in excess of \$7,000,000.

Ne Plus Ultra 15265 was bred by F. Lothrop Ames, North Easton, Massachusetts. In 1909 he was purchased as a calf by J. L. Hope of Madison, New Jersey, and S. M. Shoemaker, of Eccleston, Maryland, and was used jointly by them for a period of nine years. His dam was Imp. Itchen Daisy 3d 15630, a cow that made, under official test, 13,638 pounds of milk, containing 714 pounds of butterfat. His sire was Dolly Dimples May King of Langwater 12997, seven of whose daughters have Advanced Register records.

HIS breeding was excellent. But many bulls with excellent breeding have failed to accomplish what Ne Plus Ultra 15265 has accomplished. Many bulls also have had the power to improve greatly the producing ability of the herds in which they have been used, but were not given a chance, and their great prepotency was discovered after they were dead. To Mr. Hope and Mr. Shoemaker must be given great credit for having the vision to foresee the possibilities of this great bull. It is vision of this kind that has made for them the reputation of great breeders of Guernsey cattle that they both bear. The Guernsey breed is better for Ne Plus Ultra's having lived.



Factory Equipment on Ford Cars Since 1911

A LONG time ago, in 1911, the Ford Motor Company chose Champion Spark Plugs as best adapted to the requirements of the Ford car.

The judgment of Ford engineers is summed up in the Ford Motor Company's instruction book as follows:

"There is nothing to be gained by experimenting with different makes of plugs. The make of plugs with which Ford engines are equipped when they leave the factory are best adapted to the requirements of the motor."

Be sure the name Champion is on the Insulator and the World Trade Mark on the Box.

Champion Spark Plug Company
Toledo, Ohio

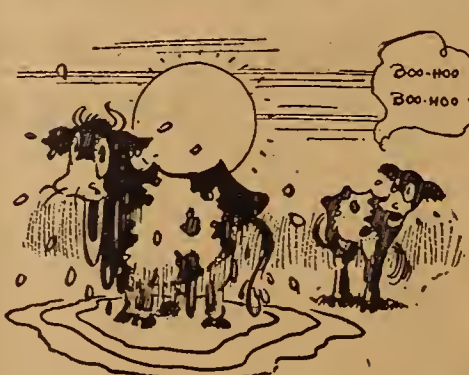
Champion Spark Plug Company, of Canada, Windsor, Ontario



Why Cows Leave Home

STARTLING information about dairying and dairy cattle was revealed in an examination in West Virginia. C. E. Stockdale, agricultural editor, sent us some of these answers, and they sounded so funny that our artist drew up the above cartoons. The answers, however, were given in all seriousness, and probably the students who handed them in thought they were scoring

high marks at the time. One paper stated that a balanced ration is "when the expenditures on the farm do not pass the income." And another "star" student thought that "bulky goods should be fed to a cow in proportion to the length of her intestines." He did not discuss just how one would go about measuring the intestines of his various cows.



"**A**BOUT 90 per cent of some cows are butterfats," according to one West Virginia student. So we picture above what will probably happen to such a cow when the mercury reaches 110° in the shade.



A FIRST-CLASS dairy cow should have "well-developed unders" according to another youthful disciple of the milk stool. The cow in the picture is demonstrating her unders to the prospective buyer. She seems to have several ways of using them, and not always to the milker's advantage.



SOME people claim that all of our fables and fairy stories are based on fact, so maybe the boy who said that "a cow that jumps is usually a good dairy cow" got his idea of dairy-cow temperament from the old Mother Goose rhyme about the "cow that jumped over the moon."



"AND she should be examined about once a month to see if she has any disease germs about her." This up-to-date dairyman is having his cow carefully examined by the bacteriologist so as to make sure that she is free from all unruly microbes.



Get the tubers well started before planting

How I Raise Earliest Potatoes

By F. F. Rockwell of New York

FOR a number of years now I've taken the first native potatoes into our local market. The only "trick" about it is to get the tubers well started before planting. It might not be practical on a very big acreage, but it certainly is for a small lot for the local market, and for the home patch.

Through this section of the State, practically no potatoes are planted before the last part of April. About the last of March or very first of April I pick out a few bushels of Irish Cobblers. For this purpose I select the longest ones. I save my seed from the others that are planted later. Otherwise, the shape makes no difference.

These are spread out on the floor of an empty box stall which has two big windows facing south, so it is flooded with sunlight. They stay here about ten days, being turned once. This turns their color some, and gets the eyes about ready to start active growth.

In the meantime I bring in two or three loads of coarse sand, usually some with a little loam in it. I try to get this from the surface, where it has begun to warm up a little. One year, when I couldn't get the sand, I used coal cinders mixed with garden loam, with good results. The sand is shoveled over a couple of times to get it warmed up, and then spread out in an even layer, about two inches thick.

THE tubers are then cut mostly into halves, thirds, or quarters. Instead of aiming to get even-sized, chunky pieces, such as you would cut for machine planting, we try to get thick slices that can be pushed down into the sand. On each piece a good strong eye is taken. The pieces are pushed down into the sand about two thirds, almost as near together as they will go, and given a thorough watering to settle the sand firmly.

In a few days the strongest eyes will be sending up stubby little green sprouts. But the remarkable thing is that these sprouts stay very short and stocky. Instead of growing out long, like a potato sprout in the cellar, most of these grown in the full sunlight will be only two or three inches in length after two or three weeks' growth. The roots, however, grow quite rapidly, and form more or less of a mat. Water is given often enough to keep the sand fairly moist, also plenty of fresh air, the windows being opened wide every warm day, and left open nights when there isn't any danger of freezing.

As soon as danger of hard frosts is over, say a week or ten days later than it would be safe to plant dormant tubers, the sprouted seed pieces are planted. We open up furrows four or five inches deep, put in the sprouts, taking care to get them right side up, and cover them entirely over. It takes about twice as long to plant as in the ordinary way, but they are up in a few days, and then grow several times as rapidly as those planted in the ordinary way.

Thorough cultivation and spraying are given, to keep them coming fast. I usually put on a "side dressing" of fertilizer just before the second cultivating, to help the tubers develop quickly. In this way I get the benefit of the best early market prices, besides having new "spuds" for ourselves.

For control of fruit diseases, let us adopt the slogan, "Let us spray." It pays. Try it and see.



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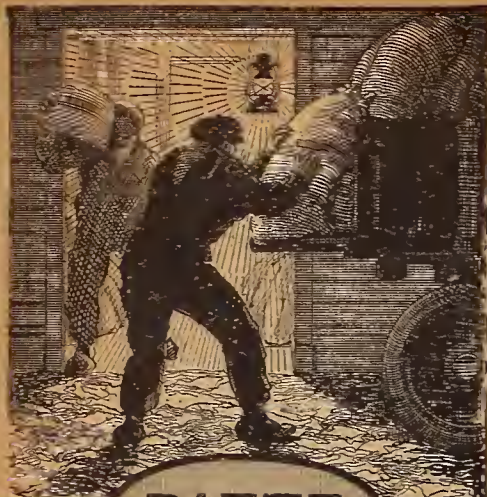
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What's Wrong With the Country Banker?

[CONTINUED FROM PAGE 5]

considered well-to-do. But they have made their money within the last fifteen or twenty years.

So it is no wonder bankers shied away from farmers as borrowers. It was too uncertain a game, and there were too many opportunities to place their money to better advantage elsewhere. The great industries were developed, the great cities of the country, and especially the Middle West, grew up, the great transportation systems were laid across the country almost overnight. All these things required a lot more capital than they could earn themselves. Where did it come from? No small portion came from small-town investors and country banks. These enterprises were more profitable than farming, and it was only economic law for capital to go to them instead of to the farms. What I am trying to point out is that times have changed. Farming is now a business, and it deserves capital.

No one was to blame unless it was old man Overproduction. But it was pretty hard on the agricultural interests. It got the bankers into the bad habit of considering farming as an unprofitable business, and one that should be avoided in making unsecured loans. That habit persists long after the reason has disappeared. Even now, when farming is more profitable than ever before, the average banker would rather loan money to a groceryman whose net assets aren't over \$5,000, than to finance a farmer who may own a farm worth several times that amount.

A good part of this blame falls on the farmer who doesn't run his farming in a businesslike way. He can't tell a banker what his costs are and what his probable profit will be. He doesn't know how to sell his credit. Bankers distrust that sort of man because they are accustomed to dealing with men who do know costs and how to make up a clear financial statement.

Also, very few bankers have interested themselves in such things as the cost of producing a crop, or the profit on any farm product. They have been willing to let the farm business drift along on its own momentum. They have been willing to take the deposits and to make loans to the successful farmers, and to forget the others. They have never known that in many cases failure has been due, not to the man himself, but to his need of capital. So, bankers, explain this to your farmers, and you, farmers, learn the trick of making a business statement to your banker.

I claim no glory for myself, as I have been for the most part like other country bankers. I have passed up many a good risk because the farmer applicant didn't know how to tell me why he needed the money and how he could make his business more profitable by its use.

MY ONLY exceptions were my own tenants and a few farmers who had enough brass to come in with a confident air, and sell me their scheme just like a city business man would. If you farmers will just remember that, it will help you a great deal in your relations with your banker. Some of these men who were so clever in selling me their credit were poorer risks than others that we turned down. Occasionally we lost on them because we overestimated their ability to make good.

The result was that we had two classes of farmers—the marked successes and the marked failures. The great majority of ambitious farmers were caught between the millstones. They didn't have capital. They merely existed. Their children floated with the tide, and the tide flowed toward the cities, where wages were higher and living was pleasanter.

These were the conditions that brought about the distrust on both sides. The banker, without being conscious of it, was a dead weight to move whenever an agricultural proposition was put up to him. He could remember 500 cases of failures to one of success. He was perfectly willing, the financial world was willing, to take a 50 per cent valuation on a man's farm to enable him to clear it or to buy equipment. There never was a time when money was not available on mortgage se-

curity if he went after it hard enough. But that wasn't the kind of a loan the farmer needed.

We must distinguish between the two kinds of financial assistance rendered the farmer. Crop credit or working capital was never sought in a large way, nor was it favored by the banker. The farmer had inherited the New England dislike and prejudice against what he called debt. The idea of making money with someone else's capital never occurred to him.

So he paid off his farm mortgage as soon as he could and tried to save enough to finance his farming operations. In case of family sickness or some other misfortune he would go shamefacedly to the banker and sell his credit as hard as he could, because he knew he had to. Many times I have known men to make up excuses for borrowing money, when in reality they needed capital badly for legitimate farming operations.

MOST farmers didn't even have bank accounts except when the bank demanded that a portion of a loan be left with them. The farmers were afraid and suspicious of banks and bankers. They looked on them as sort of a necessary evil, not as institutions that were in a position really to help them. As one farmer told a banker friend of mine after a painful half-hour trying to arrange for a loan:

BEN FRANKLIN said: "Myson, deal with men who advertise and you will never lose by it."

"I always wondered what the cages around the banks were for, and now I know," remarked the farmer. "They're to keep the bankers from biting their customers."

There has been too much of this feeling about our country banks. There is too much of it to-day. The farmer dreads going in debt, and most of all dreads asking the banker for money. He thinks he is asking a favor, when in reality that's what a bank is for. That's the way money is made in banking—selling money instead of hardware or drygoods or some other commodity. Credit is the foundation of business, the life of progress, and the basis of prosperity. And it works in the farming business just the same as in any other.

Now, I know what you bankers are getting ready to say. You are going to tell me about all the money you loan farmers, the calf clubs you contribute to, the institutes you help support, the soil-improvement propaganda you help float.

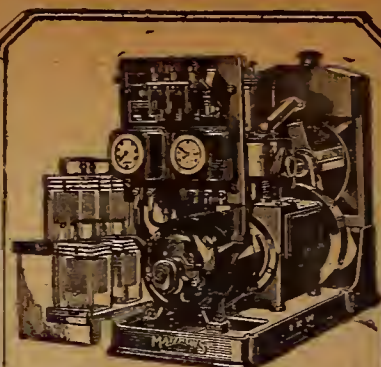
Those things are a step in the right direction, but only a step. Did you ever stop to analyze what per cent of the farmers in your community have bank accounts? If you did you would find that a great many do not.

Why? Simply because they never borrow money of you and can see no good reason for opening an account. They are timid about dealing with banks, and you are not helping them to overcome that timidity.

It has only been within the last few years that banks have started advertising. And these have usually been only the largest and strongest city banks. The country banks still shroud themselves with an atmosphere of aloofness and independence. They don't encourage farmers to become borrowers. Of course, they lose money by doing this. Furthermore, there is nothing which would do so much to help stimulate production and reduce the cost of living as the extension of credit to worthy farmer risks which are now neglected.

Of course, there's the Federal Farm Loan. That has done a world of good. It should be increased to \$25,000 or more to do the most good, but even then you are still dealing with a mortgage loan with a lot of red tape connected with it. A farmer can't use it to buy fertilizer or feeder cattle. What is needed now most of all is a plan to provide working capital in any amount from \$25 on up. The country banks could handle this business if they would.

And, farmers, don't let the cage around the banker scare you out. Underneath he is just as human as you are, and he wants your business, too, provided you show him you are a business man who can make a plain business statement of your wants.



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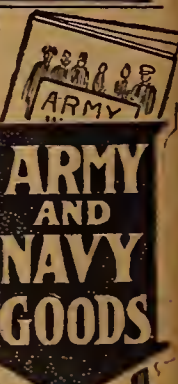
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ALBERT MILLS, Mgr., 1936 American Bldg., Cincinnati, O.

Power for the Peak Loads

(CONTINUED FROM PAGE 15)

is rather a short-sighted policy. If you are a real farmer, you surely are convinced that, even though horses are disappearing from the city streets and from the improved country highways, there will be need for horses and mules in the fields for years to come. Good draft horses and mules still command a good price, and the curtailment of breeding throughout the country within the last year or two cannot help but cause a shortage of mature horses in the next three or four years.

Last spring I rode across the South from Columbia, South Carolina, to Mobile just at the time when the work of plowing and preparing ground for cotton and corn was at its height. As I looked out of the car window and saw the little fields, the innumerable terraces, the short, crooked rows of last year's corn and cotton stalks all along the line, and a negro with a single mule and a little turn plow in almost every patch, it was impressed most forcibly on my mind that as long as the present system of farming is in vogue there mules must furnish the bulk of the power for the work. This nigger-and-mule system is so well established that it certainly will take a long time to change it radically.

Up to the present the South has never raised many of its mules, and there is no reason to expect that every farm there will suddenly become self-supporting in the matter of work stock. As a matter of fact, few of the States outside of the corn belt have ever raised more than enough horses and mules to supply their own needs, and the number of colts has dropped off greatly there in the last couple of years.

Young horses or mules which are still growing into money can sometimes be used to help in rush work, even though they cannot stand steady work day after day throughout the season. Before I left my father's farm in Indiana it nearly always fell to my lot to use a colt less than three years old to fill out my plow team in the spring. We usually raised one or two colts a year, and Dad always aimed to use them for spring plowing in the season before they were three years old. The value of the colts increased pretty steadily until they were five or six years old, and our plan was to sell the mature horses when they had reached their maximum value, and to use the colts to take their places.

WE ALWAYS favored the colts during their first season and, if there was any choice, used them for the lightest work, and laid them off first when the rush work was done. Father was very particular about the colts. They might lose some weight while they were working, but with a complete rest and good feed for a few weeks they never failed to regain all they had lost.

We ordinarily think of larger implements as being primarily for saving man labor, but some of them save a considerable amount of horse labor as well. Implements for harvesting hay are good examples. You use two horses on your mowers, rakes, and tedders, no matter what size they are. Two horses with a $4\frac{1}{2}$ -foot mower will not usually cut more than nine acres of hay in a day. The same two horses with a seven-foot mower will cut 14 acres. Haying tools are of comparatively light draft, and even the largest sizes of the tools mentioned do not make heavy loads for a team. Unless your fields are exceptionally rough and broken, or unless your hay is exceptionally heavy, you can use the largest sizes.

The two-row cultivator for corn is built to enable one man to do the work of two. But nearly always only three horses are used on it, and the outfit covers practically as much as two one-row machines, each drawn by two horses—a clear saving of the time of one horse, as well as that of one man. The use of such implements as these will lower the cost of doing the work, whether it comes during the busy season or not, but their main value lies in their ability to help you through your busy times.

I have talked with many corn-belt farmers who are growing or would like to grow alfalfa, but almost without exception they say that one of the biggest drawbacks is that the first cutting of the hay must be put up just at the time when corn cultivation demands the greatest amount of work. Without a doubt this is one of the main reasons for the slow introduction of this excellent legume into the corn belt, but by using the largest haying tools available, and two-row cultivators for the corn, one can at least partially smooth out the peaks of both man and horse labor.

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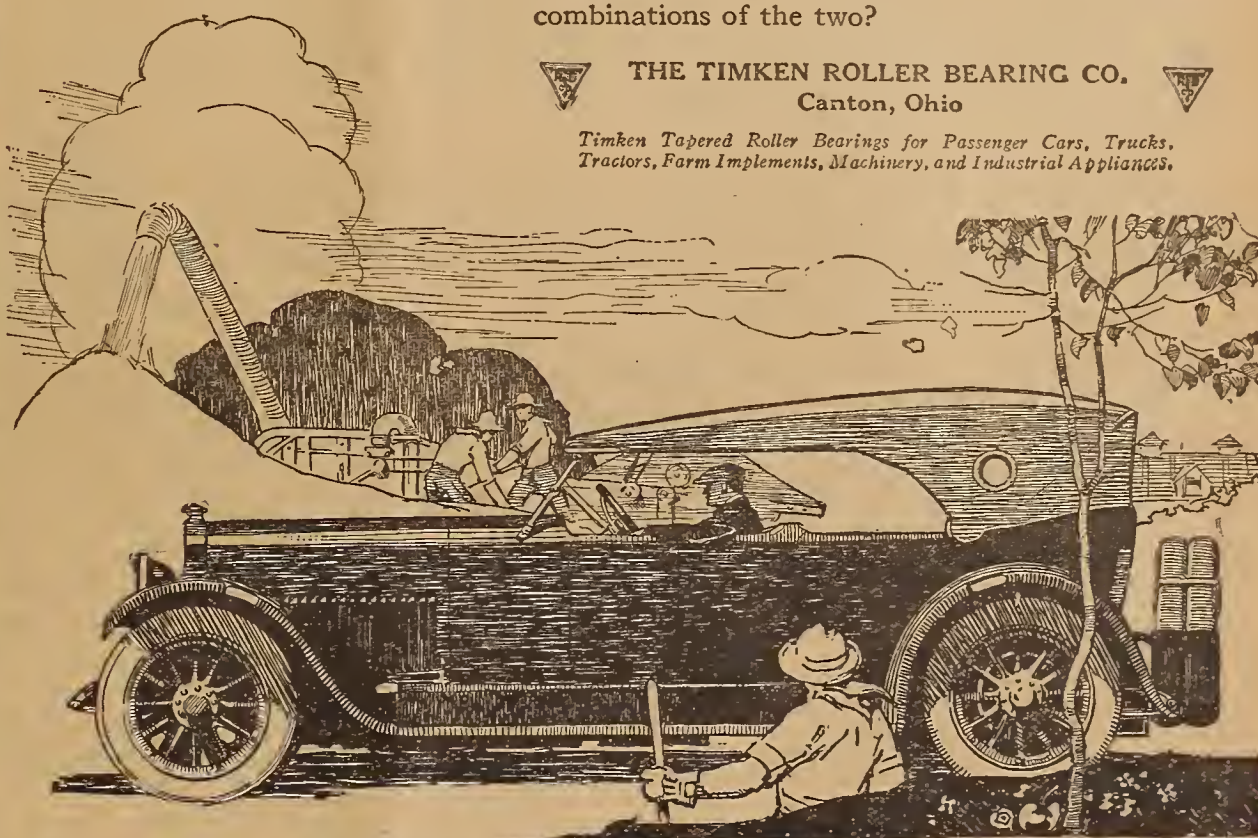
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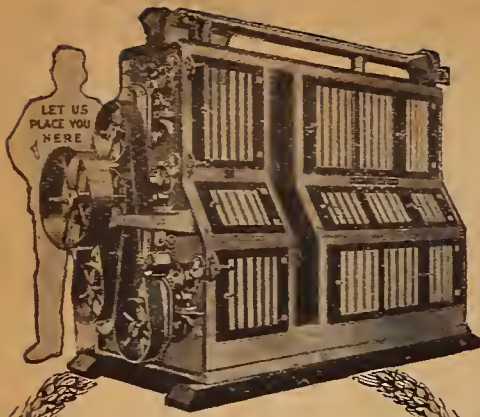
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When You Buy Hog Cholera Medicine, Look Out for Fakes

By Thomas J. Delohery

HIGH-GRADE serum still holds the field as being the only effective enemy of hog cholera. Tests of various so-called cholera remedies have proved them to be without value.

The prevalence of cholera in Indiana caused many of the farmers to resort to these "cure-alls," but the results were fatal instead of beneficial. Purdue University decided to test a number of these proprietary preparations, under the state law, and after a lengthy experiment declared them to be of no value.

Each test was made with a check lot, and all hogs either subjected to cholera in an infected pen, or the infected blood was injected. The results show that 235 hogs were treated with 20 different preparations. Of this number, 187 died of cholera. In the check lots were 227 hogs. These were untreated, and 179 died. In each case, the hogs were opened, and revealed unmistakable signs of cholera lesions.

The facts brought out in these tests show that it is a waste of time, money, and hogs to fool with these remedies. A farmer, upon finding symptoms of cholera in his hogs, should call a competent veterinarian and have the animals treated with serum. The double treatment has been found most effective.

Some of the methods used by the manufacturers of these alleged remedies in advertising their wares were evidently patterned after the "come-on" methods of quack doctors. One firm, in particular, in its literature says: "One cholera germ divides into four germs in twenty minutes. These again subdivide into sixteen in another twenty minutes, so that if this rate is steadily maintained a single germ becomes four thousand in two hours, and one thousand billion in ten hours. An animal affected with cholera is literally 'eaten up alive' by these germs."

LAND isn't all that's necessary to make crops; brains help. A poor farmer can ruin the best of land in a year or two, while a real farmer can make even poor land produce.

There has been quite a bit of cholera through the corn belt, especially in Iowa and Illinois; and I believe this warning will be of help to some men who have been attracted by the advertising and claims of these alleged cures.

Hog cholera is a highly contagious disease, and when it is discovered no time should be lost in segregating the sick hogs. The symptoms vary; the most characteristic is that the hogs stand with the hind feet crossed or together, and in walking stagger or exhibit a weakness in the hind quarters. Their backs will be arched, and their abdomen sort of tucked in.

The first symptoms are a rise in temperature, diarrhoea, and a loss of appetite. Generally, the first sign is that the hogs lose their appetite and look

sick. They also cough, and may be constipated, which will be followed by diarrhoea. Prevention, of course, is best. Good, sanitary quarters, plenty of fresh air, and sufficient wholesome food, with exercise, will keep the hog in tip-top shape, and his system will be strong enough to ward off disease. However, cholera may break out on any farm, because it is contagious, and may be carried from place to place.

Persons coming from an infected farm carry the germs on their shoes, wagons and other vehicles may carry it, and it may be spread from railroad trains which carry infected hogs to market.

When cholera breaks out in your herd, you should take immediate precautions to prevent its spread. The sick and healthy hogs should be separated at once, and all hogs vaccinated.

All animals should be kept in the open, and have airy, warm quarters to sleep in. Plenty of wholesome food should be available, and the hog lots and houses disinfected. If any hogs die, the carcasses should be buried in quicklime, or burned.

He Grew Good Lettuce Under Muslin

By J. T. Bartlett

IN a Pacific Coast district where the competition of Chinese market gardeners is so intense that American market gardeners are nearly non-existent, John Walsh achieved success by developing specialties in ingenious ways. One of his products, head lettuce, has paid him at the rate of \$1,000 an acre, sold from midsummer to November, a period when the local market is bare both of Southern and other local head-lettuce supplies. Lettuce is essentially a spring vegetable. It does very poorly in hot weather under ordinary cultural conditions. In addition, John Walsh's district often had summer and fall drought, which was a further handicap, for lettuce, to be of excellent quality, must grow rapidly. Experimenting until he had obtained the best varieties for his conditions, Walsh developed an irrigation system, introduced muslin frames, and ultimately attained a twelve-cylinder gardening success.

The irrigation system was the first to be used in his district, and it provoked unlimited astonishment. The total cost was less than \$350. He purchased a pumping engine and some second-hand cannery pipe. Water was obtained from the drainage ditches which gridironed his delta island. The irrigation outfit could be transported about and used as required. When natural precipitation was insufficient for rapid growth, he applied water.

The muslin frames were of double purpose. Walsh used them to protect against extreme heat the lettuce plants not yet transplanted. In hot spells he used them over the growing heads. As the nights were always cool in his latitude, the lettuce survived summer heat and grew to perfection.

Lengthening his selling season and seizing a further market opportunity, he employed the muslin frames to ward off frost. Under average weather conditions he could ship lettuce until November.

Not specifically, but in general application, Walsh's methods could well be emulated elsewhere. Textbook knowledge alone didn't accomplish this head-lettuce success. Walsh studied his local market, its peculiar individual characteristics. He thought out a way to counteract the adverse seasonal conditions of midsummer and early fall. He dared to use irrigation in a region where rainfall is above average, and where soils, full of humus, are extremely retentive of moisture. The irrigation idea struck general farmers as absurd, but Walsh appraised its intrinsic merits unblinded by prejudices. Intelligent survey of local farm environment, of local markets, counts heavily for success on any farm, as it did on Walsh's few intensive acres.

Walsh couldn't compete with Chinese gardeners in manual work, but he could convincingly in brain work—and did.

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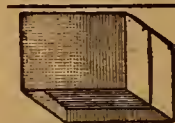
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Turn
to
Page 41
A
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BOOKS
to
YOU

Careful Planning Makes Farm Chores Easier

By L. M. Edholm of New York

UNTIL recent years it was thought that anyone could be a farmer, and parents have been heard to say, "Oh, well, John won't take an education. We'll have to make a farmer out of him."

But the successful farmers of to-day and the future are of a different sort. They are energetic, ambitious men who choose the life in the country, not because it needs no preparatory study, but, on the contrary, because it means endless research work—a profession that never becomes stale, as there are always fresh discoveries, new complications, and problems to keep one alert and keen on the job.

And our future farmer is not quite satisfied with the knowledge gained at most of the agricultural colleges. It is not enough to study soils, fertilizers, and crops. He is demanding business methods. He wants sanitary, up-to-date buildings, modern conveniences, order, and profit.

At the Nebraska College of Agriculture a miniature model farm has been constructed that represents a nearly ideal arrangement for a 160-acre farm. This plan was worked out for one particular farm, and has been tried out in several counties of Nebraska.

The arrangement of this farm was so successful that it was taken as a model at the college, and small buildings were constructed, one-quarter size, and arranged on the campus for student instruction.

In the placing of the buildings such things as the prevailing winds were taken into consideration. The barns and yards are located east of the house, so that unpleasant odors are carried away by the wind, which is south and southwest in summer and north and northwest in winter. The house is placed on high, well-drained land. This means a good view from the house, and prevents barnyard drainage from reaching it.

All buildings are windbreaks to adjoining yards, nearly all fences serving two lots. Time and labor saving has been well planned, and the yards are placed next to the pastures, the garden close to the house. It is possible to drive to nearly all of the buildings without opening gates.

In this arrangement of buildings a method has been studied out which saves steps for the worker, and makes it possible to get the chores done in half the time. In the first place, the buildings are arranged to hold sufficient feed for the stock in the yard next to them. And when that is done it is merely a matter of working out a course around the barnyard—feeding, milking, etc. Thus, in the model farmstead a man goes from the house to the barn, where he tends the horses, colts, cows and calves, separates the milk, and feeds the

calves. He then takes the remaining skim milk to the pigs, and goes to the combined crib and granary to feed the fattening hogs and fat cattle. In returning he passes the hay shed and feeds the stock cattle and then the poultry. He steps into the milkroom, gets his cream, and returns to the house. It is all as efficient as a modern factory.

The young farmers of the University of Nebraska are leaving college with some very practical ideas regarding farming, and consider that the arrangement of the farmstead is one of the most important details. Some general rules which have been adopted at this college are:

Take advantage of the natural elements to make the buildings comfortable in summer as well as in winter.

Low, hemmed-in alleys are damp and hot in summer, and very little, if any, warmer in winter than high and slightly places.

The land on which the buildings are located does not produce crops. For this reason, when choosing between two locations, choose the one with the poorer soil.

Buildings situated in the sun but with breezes blowing through them in the summer are cooler and more comfortable than those in the shade with no breezes. Hence, a barn with a central alley running north and south is cool, even in very hot weather.

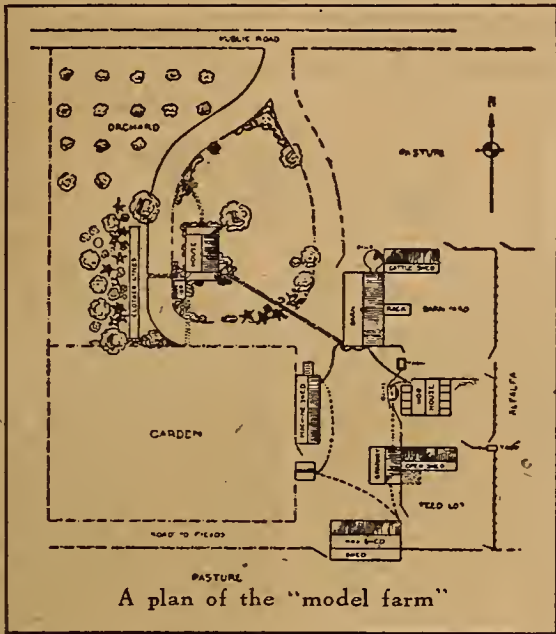
Good fences always pay, and each barnyard fence should serve two lots, if possible. Select a good view for the house. Do not have the barn traffic pass the house. Fence the poultry from house and garden. Have garden convenient to kitchen.

Europe's Poverty Hurts Us

EXCHANGE rates existing with foreign countries at present are of direct interest to farmers, thinks Prof. E. L. Currier of the Montana State College. "It is of vital interest to a farmer in Montana, or any other part of the country, that exchange rates with foreign countries have been going downward steadily since last July," says Professor Currier.

"The practical significance of this depreciation in the value of foreign money is found in the fact that at the present time it takes to buy a dollar's worth of American goods \$1.36 of English money, \$2.35 of French money, \$2.75 of Italian money, or \$18 of German money.

"This condition makes it extraordinarily difficult for European nations to trade with us, and leads to the conclusion that these countries will buy as little as possible, which will reduce the volume of our exports, and tend to cause low prices for farm products in this country."



A plan of the "model farm"



The miniature model farm laid out by the Nebraska College of Agriculture

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So wrote a grown-up little girl to

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He has passed on—and the grown-up world mourns. In the hearts of the little children is a void that cannot be filled—but that can be forgotten by the reading and re-reading of those simple and childlike poems.

Those of us who missed things in childhood—missed learning to ride or to swim—feel that there is a lack that can never be made up. Even more is this so with things of the spirit. The child whose imagination has been enriched by the beauty and charm of Riley, carries a treasure to old age—a treasure hard to get later on.

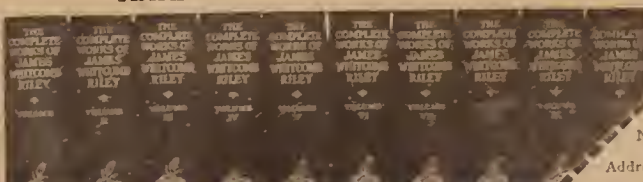
From the little girl who said she felt all alone without him to the President of the United States, who pays him tribute, Riley is in all hearts—big and little.

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Boyhood on a Middle-West Farm

[CONTINUED FROM PAGE 13]

and make the country feel less windy. In western Kansas and Nebraska and eastern Colorado, where settlement is not extensive, the winds still blow. Then, too, the same kind of weather does not prevail every season.

I was now getting large enough to help in the harvest field. I could not "swing a cradle," for that is a full-grown man's job, but I could follow the cradle, raking the swaths into sheaves for the binder, and sometimes doing the binding and putting the sheaves into shocks.

Up to about this time most all grain was cut with the cradle, and to be a good cradler was to be much in demand at harvest time. Cradling was hard and perspiring work. I wonder how many boys these days know what a grain cradle is, or was, or ever saw grain cut in that way?

The reaper, drawn by a span of horses, was now coming into use. I think the first one I ever saw was used in Father's wheat field. Two men had to be used to run it—one to drive the team, the other to rake off the grain as it was cut, rake it off into sheaves for the binders, usually one to each side of the field, according to size and shape of the field.

This machine was soon followed by an improvement—the self raker and binder—doing away with rakers and binders.

After harvesting came the threshing of the grain. My first recollection of this was of a method as old as Bible times. From the Book of Ruth we learn that Boaz had a threshing floor; and in II Samuel we are told that when the Israelites were removing the ark of the Lord from the house of Abinadab "they came for Nachon's threshing floor," where Uzzah was stricken for placing his hand upon the ark. I wonder if my father's threshing floor was very different from that of Boaz and of Nachon? It was a good deal like a circus ring, but not so large. Boards set on edge were put around it; and if horses were to be used in tramping out the grain, boards were laid down for a floor. On this the sheaves of grain were scattered and a span of horses put on and tied to a center pole, driven round and round until it was supposed all the grain was tramped out. Then the straw was taken up with forks, and well shaken to get all the grain out. Sometimes it was my lot to ride one of the horses on this endless round.

ANOTHER method of threshing, and the one probably used by Boaz and Nachon, was by flail. Perhaps you know what a flail is—a piece of wood, something like a baseball bat, only shorter, tied or swiveled to a handle some four feet long, similar to a stout hoe handle. It was a somewhat picturesque operation, that of three or four men surrounding a threshing floor flailing out grain.

It was a good long way from tramping out grain with horses, or flailing it out, to present-day methods, wherein the traction engine is the power, and threshing, cleaning, and sacking of the grain is all done at one operation by a big machine.

But that has been the progress of the world in the last fifty or sixty years. Previous to the Civil War there were no telephones, no electric lights, no talking machines, no automobiles, no cameras, no movies, no gas or electric cookers, no tractors, but few pianos, nor many things we now have that we wonder how in the world we could ever do without.

After threshing out the grain by horse or flail, came the cleaning, getting out the chaff and as much of the dirt as possible. Portable windmills were used for this purpose, and nearly every farmer had a windmill. There were windmill peddlers in those days, the same as there have been sewing machine peddlers since. Windmills being

large and bulky, a peddler could not get many on his conveyance. Four made a fair load, but if he could carry six, and you saw him coming, you wondered what kind of a show you were about to meet.

PERHAPS some of the boys of to-day do not know what a windmill is, or was. I do not mean those things scattered over the prairie country perched up on stilts designed to catch the wind and pump water. The mills I am talking about were sometimes called fanning mills. They were a box-like affair, equipped with a fan—operated by machinery and turned by hand, but to which a belt and power could be attached. There was a series of sieves or sifters with graded openings or spaces in the wire, the sieves placed one above another a few inches apart, and made to oscillate from side to side by the machinery. On the top of the mill was a big hopper into which the uncleaned grain was poured, and as it passed on down through the mill the fan forced the chaff out while the heavier grain went through the sieves to the bottom.

Farmers who did not have a windmill, and wished to clean a little grain, often used the free winds of heaven to do it. Selecting a day and a place where the wind was unobstructed, they would place a large sheet on the ground and, taking a measure of grain,

would hold it as high as possible and jerkily pour it out. The wind catching it would blow the chaff away while the grain fell on the sheet.

About the last bit of fall work in making things for the winter, following just after pumpkin-butter time, I think was sorghum-making. Father usually grew enough sorghum for our own use. But I didn't like sorghum-making. The weather was like maple-sugar weather, only at another time of the year. The blades of the canestalks had to be stripped off, usually done before the stalks were cut. To strip cane in the cold and sleet was not a pleasant job. But, again, the weather might be most delightful. But there was always a hurry to get through with the job before there was a freeze, as a freeze soured the sap in the cane. Then came the crushing of the cane to get out the sap, usually done by running through between upright rollers. Father made his own mill or crusher. A sweep was attached and horse power applied to turn the crusher. As in maple-sugar- and sirup-making so in sorghum-making, the sirup was then boiled and extra care in skimming taken. Any failure in this resulted in a molasses of a dark color and greenish taste.

Those large unsettled stretches of prairie back of the farms where the prairie hens hatched their brood was where the coyotes or prairie wolves abounded. I suppose they lived largely on gophers and mice and small birds and their eggs and the eggs of the prairie chickens.

The coyote was an annoying pest, dangerous only to poultry and pigs and other young stock. They were very numerous, and were often seen in the daytime, though they did most of their marauding at night. They were to be seen usually in singles, occasionally in pairs; but after night, such was the ventriloquial quality of their voices, a few gathered around some offal made you think there were dozens at the feast. Having found a dead animal, there would be much yelping, howling, and fighting.

They were hard to take, either with a gun or by poison or with traps. Father and a neighbor one night put many pieces of poisoned meat around back of their farms. Next morning tracks showed that the circle of poisoned bait had been followed all around, but while a few of the baits had been moved there was no indication that

[CONTINUED ON PAGE 59]



—*dead!*

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Little Inventions That Have Helped Me With My Sewing

By Bertha Bellows Streeter

PROBABLY it is because sewing has always been difficult for me that I have always wanted the very latest contrivances for expediting such work. Any new little thing in my sewing kit is like new shoestrings to a child; it makes me feel so fixed up that it takes a good deal to daunt me.

However, I can't have everything I want, any more than most other women, so I often have to fall back upon something I have heard about, or work out for myself something that will serve me just as well as the coveted article.

One day I found myself alone when I needed somebody to determine where the bottom of the hem should come on the skirt I was making. It was very necessary that I finish the garment that day, and I cast about for some way to help myself out of the predicament. Finally it occurred to me to rub chalk along a long edge of the sewing table. Then I put on the skirt, adjusted it properly at the waist, and put a pin in front where I wanted the bottom of the hem to be. Then I turned around slowly a number of times, just touching the edge of the table, until there was a well-defined chalk line around the skirt. This line of course, was an equal distance from the floor all the way around.

I removed the garment, spread it out on the table, and measured the distance from the pin to the point in the line directly above it. To this distance I added the depth of the hem, with half an inch extra for turning under at the top. This determined the point in the middle of the front where the skirt should be trimmed off. With the yardstick and crayon I marked off this number of inches below the line for

the desired length all the way around, then I tried on the skirt, to be sure the bottom was true before I cut away surplus material. The hem was put in in the usual manner, and proved to be so even that since then I have been quite independent of the services of a helper when making my own garments. It has been a wonderful help, and did not cost one penny.

A FRIEND showed me her patent darning that fastens to the foot of her sewing machine. Of course, I wanted one too. Then, I discovered that with a set of embroidery hoops I could do even better work on torn places in garments than she did, and with less effort. By using the large hoops with flat pieces and very small ones for rents in very inaccessible places, I get rid of a bunching-up of material that she always has to contend with.

With a piece of thin material underneath the place to be mended, I fasten the cloth in the loops so it fits snugly with the torn or worn place in the center. If necessary, I lightly overcast the edges of the hole to the good material with very fine thread, then I slip the hoop under the machine needle and darn by sewing back and forth, using the fine thread here too. For mending very sheer white garments, laces, handkerchiefs, or table linen, I use Battenberg thread No. 1000. When the stitching is carefully done and parallel to the threads in the material to be mended, this makes a darn almost impossible to detect.

I make folds of goods of uniform width for binding or trimming by a very simple contrivance: I paste down the flap on an envelope, cut off one end of the envelope,

[CONTINUED ON PAGE 44]

A Whole Evening of Musical Fun

By Ruth H. Frost

THE invitations to what proved to be one of the jolliest evenings that can be imagined read as follows:

Bring all of your daughters
And every last son,
Our next social Grange
Will be Musical Fun!

Anyone who has had charge of a mixed crowd of old and young knows what we were up against when we tried to provide entertainment which would interest all.

The first thing was, of course, to get the guests mixed up well—to overcome the formality and stiffness and awkwardness which is often evident at the very beginning. We "broke the ice" before it had a chance to form, with a "Humming Game." As each guest entered, he or she was given the name of one of four familiar songs, and was told to go around humming and hunting for others who were humming the same tune. There were about thirty-two guests, and we gave the same song to eight persons, making four groups in all. After all had arrived, the various groups had a chance to vie with each other to see who could hum the best. This game really proved a splendid "mixer."

Next, each group was told to prepare a musical "stunt" of some sort or other, for the amusement of the rest. After some thought, the first group decided to imitate a jazz band, each member of the group representing a certain instrument. This caused a great deal of merriment, as there was no music heard, only the wild gestures

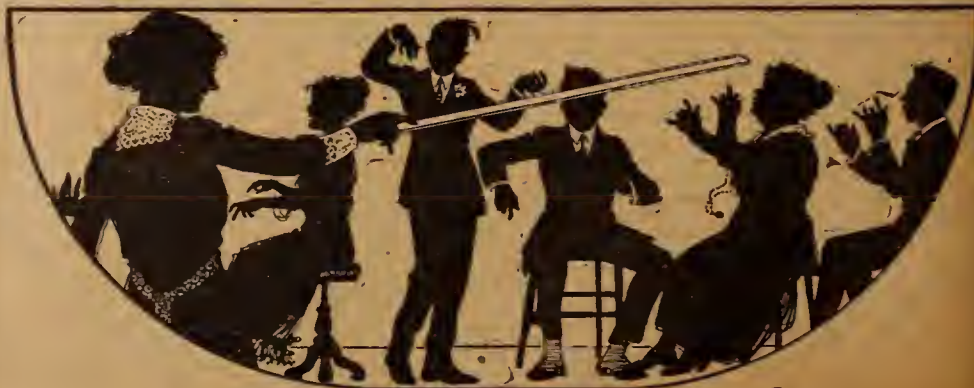
to be seen. The director was especially droll, using a yardstick for a baton.

Another group blindfolded themselves, and then waltzed in couples to music. The effect was most comical.

The third group was most original of all. The eight people in it—just enough for the eight tones of the scale—represented a human piano. Standing in line, facing front, they invited a real musician of another group to play on this "live piano" the chorus of "Carry Me Back to Old Virginia"—chosen because all eight tones of the scale were found in it. As she tapped a person on the head, he would bob down quickly by bending the knees and then jerk up again, like the key of a piano, at the same time singing aloud his syllable in the words of the song. The leader was kept busy, of course, running up and down the line to tap the proper person. It was judged the most novel stunt of the four.

The fourth group played "Musical Guess." One person left the room, and after the others had agreed upon some object or person to be guessed by the absent one, or some action to be gone through by him, he was permitted to enter again. The pianist watched him as he went about, and if he were far away from the object she would play very loudly, warning him to go elsewhere. As he approached the object she would play more and more softly, and cease entirely when he touched it. In the same way, if some action was expected of him, such as removing a pin from one per-

[CONTINUED ON PAGE 47]



One of the liveliest features of the evening was a jazz band



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What the Wood Elf Did

[CONTINUED FROM PAGE 24]

then told the skunks that he was sorry he accused them of stealing, and bade them follow him. He took them to the vicinity of the porcupines' homes, telling them to help themselves to food again. Of course, the skunks were afraid now, and they cowered before the elf, claiming that they had eaten so much dinner a while back that they could not possibly eat any more. 'We were such pigs at dinner!' the leader vowed.

"Since you are so honest," the elf declared, 'I wish to show you to all living things in these woods. Come, please, for I wish to have you tell everybody about what good fellows you are.'

"The elf blew a sharp blast through his teeth, and at once all the porcupines came on the run. There also came thousands of birds, rabbits, squirrels, badgers, frogs, toads, etc., and when these were lined up in crowds under the trees the elf announced that he was about to present to them some very fine inhabitants of the woods and meadows. 'You have all seen these,' said the elf, 'but you have never seen them as you will now behold them.'

"The elf roared in a terrible voice, 'Skunks! Thieves! Sneaks!' and at once every skunk stepped forward. They did not wish to come, but they seemed to have no control of their feet, which made them do as the elf demanded.

"Shamefaced the skunks stood, all covered with quills which the porcupines had shot into their bodies.

"These fellows," exclaimed the elf, 'storiéd to me after they robbed the porcupines. They say that sandburs got into their fur.'

"None of the birds or animals ever saw porcupine stickers before, and they nodded their heads, believing that the stickers were really those of the sandburs.

"WELL, the elf made the skunks pull the stickers out of one another's bodies, and when this task was finished he stood them all in rows against trees, their faces hidden in their paws and their backs to the crowd. At a given signal the porcupines shot quills at the skunks, and each time that a quill struck the skunk cried aloud. This was kept up for quite a while, and the skunks begged to be allowed to go on their way. They told the elf that if they had to remain standing as they were very much longer they would turn gray with pain and worry.

"Give them the chance! Let them worry and turn gray," the elf said, motioning to the porcupines, who again began shooting quills. They shot rows of stickers into both sides of each culprit, along the back of each, from the tip of the tail to the tip of the nose. Each time now that the quills struck, everybody noticed that the fur of the skunk turned white, and every one of them were striped.

"At last the elf cried 'Go!' and the robbers hurried away, glad to escape with their lives.

"Hereafter," declared the wood elf to everybody, 'when you behold a skunk, you will find that he has a set of stripes on his body. When you see these stripes you will know that you look upon an animal who cannot be trusted. If any one of you ever have a desire to turn robber and try to steal the food of the porcupines, who are industrious and deserving, remember that they have plenty of stickers.'

"Nobody but a turtle could rob the porcupines," a bird remarked. 'I am a turtle dove, but I hope none of you will think that I'd try to be a thief.'

"There was a kerplunk in the water of the river just then, and the elf, laughing, explained that a turtle had heard the words of the dove and dropped off a log into the stream, thinking that someone was calling him a robber."

Thus ended the porcupine's tale.

"That's quite a story," the muskrat mused, touching one of his companion's quills with a paw.

And then, Mr. Porcupine, to show his skill, picked up a few more of his loose quills that were stuffed with bits of wood, and cast them into the side of a tree.

"Is that the way you do it!" cried the muskrat, much astonished.

"That's the only way a porcupine can shoot his quills now," was the answer. "In the old days porcupines may have had another method, and, according to the story that I have just told you, I guess they did. I have related my tale just as it has been handed down in our family for many years, so I am not at liberty to change it myself."

"Oh!" grunted Mr. Muskrat, thinking deeply, the while combing the fur on his sides with his paws.



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A Housewife Speaks

By Mrs. M. E. Wille

SINCE the amazing changes brought about by the war, and since women are holding so many responsible jobs in the industrial field, I believe we housewives are more than ever inclined to feel discouraged with our lot. We pick up a paper or magazine and find pictures of women who are holding unusual jobs. That is, under past conditions the jobs would have been unusual, but now it has grown quite common to find women in almost any line of work. We read of the large salaries they get—and it makes us sigh. Thinking of these things, knowing that I can never resign, I've found reasons why my work is best of all.

It is complex indeed, this job of mine—made up of countless humdrum tasks, for I'm a farmer's wife. I alternately cook, wash dishes, kiss a small bumped forehead to make it well, hoe in the garden, mend socks, overalls, and grain sacks, button a refractory button on dolly's gown, and try to make prospects look brighter to John, who is inclined to get blue at reverses.

It surely is a responsible position that I hold. The physical welfare of husband and children is largely in my charge. I influence, perhaps involuntarily, my little ones' mental and moral growth.

As to possibilities, there is no limit to them. Possibly, in years to come, our two-year-old, who now carols like a little bird, may develop a voice that will thrill the hearts of thousands. Perhaps our schoolgirl daughter, nicknamed in babyhood "Sunbeam," will prove indeed a sunbeam in the niche where she finds herself. It may be that John will be happier, even better, because of me.

And the rewards of sympathetic, intelligent, successful wifehood and motherhood! Eloquent tongues have enumerated them since time began. But who has words to express all that a mother feels when the child she has borne and reared becomes the man she hoped he might be? When her baby girl blossoms into womanhood with a bonny face, a clean, healthy body, and a pure heart? When the reticent John, at the end of a difficult day, offers a caress, a few loving words of praise?

I am sure our occupation is the hardest, pleasantest, safest, most hazardous, most perplexing, and most worth-while in the world. If we fail, our inefficiency will shadow the lives of the ones we love the best, so we've got to make good. All together, fellow workers, homemakers, nation-builders, let us take up our tasks with a will.

Little Inventions That Have Helped Me

[CONTINUED FROM PAGE 42]

then cut off one corner at the opposite end in a three-cornered piece so the opening will be about an eighth of an inch longer than I want the width of the fold. Next I cut my material in long lengths, on the straight or bias according to the purpose it is to serve, one half of an inch wider than the fold is to be, and sew the lengths together, end to end. One end of the cloth is then pulled through the envelope and out through the small opening, the two edges of the protruding piece of material being turned back toward the wrong side of the cloth, leaving the right side perfectly smooth and even. Now, by pulling the cloth slowly through the aperture and pressing it down with a hot iron as the envelope is pulled along to the left, I get a fold ready to be stitched without further preparation.

Small pieces of wrapping paper are a great help when sewing thin materials like georgette, maline and the like. I stitch through the two thicknesses of goods and the paper at the same time, then pull away the paper, which leaves the goods as smooth as if it were a bit of cambric instead of material so difficult to put through the machine.

Lift off Corns with Fingers

Doesn't hurt a bit and "Freezone" costs only a few cents.



You can lift off any hard corn, soft corn, or corn between the toes, and the hard skin calluses from bottom of feet.

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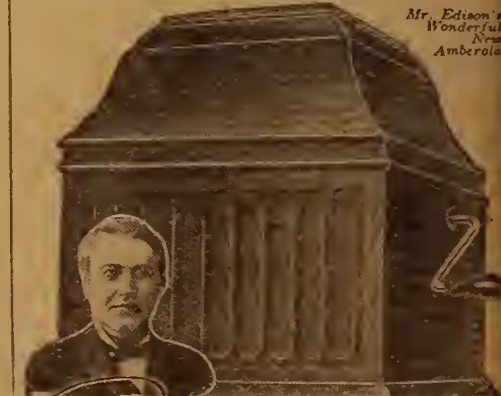
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How I Avoid Backache on Wash Day

BY REMOVING the body from a discarded baby carriage and fastening a clothes basket in its place, I have solved the problem of lifting and carrying a basket filled with heavy wet clothes from the laundry to the clothesline. The rolling basket is easily pushed along the line as the clothes are hung, and as they are gathered in. It also saves stooping over so far, as the framework raises the basket about twelve inches from the ground.

In summer when mowing and raking the lawn we spread an old sheet over the basket, fill it with grass, and roll it away. This saves time and labor. The frame of a child's wagon may be brought into similar uses.
Mrs. J. A. C., Texas.

Rescuing the Embroidered Pillow Slip



WHO has not regretted throwing away the beautiful work on embroidered pillow slips that was still as good as new when the body of the pillow slip was worn out?

I hit on the following scheme to make it do duty again: The embroidery designs usually run to a point, so I take some good narrow insertion and set the embroidered end on a new pillow slip as the drawing shows, and it looks as though the insertion were part of the design.

A. V. B., Arkansas.

A Few Egg Dishes

APRICOT OMELET

Press enough canned apricots through a sieve to fill a small cup. Melt two tablespoons butter, and in it mix two tablespoons flour and one-fourth teaspoon salt. Add the apricot, and stir over fire until it boils. Then beat in the beaten yolks of four eggs. Remove from the fire and fold in the beaten whites of the eggs. Butter a frying pan, pour in the apricot mixture, and let stand on the top of the range, not directly over the fire, for one or two minutes. Put in oven, and cook until a toothpick thrust into the middle of the omelet can be drawn out without any of the mixture adhering to it. Fold across the middle, and serve with the remainder of the can of apricots heated and poured around it.

DENVER EGGS

Grease a baking dish, and in it put a cup or more of cooked tomatoes. Over these spread a layer of bread crumbs, break in enough eggs to cover, having them not too close together. Dot with butter, dust with salt and pepper, cover with bread crumbs, and bake.

SPAGHETTI OMELET NEWTON

Make an omelet beating the yolks only. Whip the whites in a separate bowl. Stir together gently, and pour into buttered frying pan. When ready to turn, fill with long strips of cold boiled spaghetti warmed in hot water a minute. Butter, salt, and pepper, and add a spoonful of apple jelly.

My Versatile Pancake Turner

EVERY day and nearly every meal the humble cake turner comes to my aid. It turns the frying potatoes smoothly and rapidly. It lifts the eggs from the spider without disturbing the yolks.

When making potato or similar cakes cooked in the frying pan, the broad blade can be trusted to turn them and transfer them to the platter. It will loosen the meat from the roaster. It is the best agent imaginable to keep thickened gravy from sticking to the bottom of the pan.

I use it too for taking hot cookies off the pans—but why go on? Just let your cake turner aid you in cooking a while and soon you will adopt my motto, "When in doubt, use the pancake turner."

M. E. W., Michigan.

Teeth Grow Dingy Because You Leave a Film

All Statements Approved by High Dental Authorities

Teeth Are Ruined by It

This is why the daily brushing so often fails to save the teeth.

The cause of most tooth troubles is a slimy film. You can feel it with your tongue. It clings to teeth, enters crevices and stays. Ordinary brushing methods do not end it. So, month after month, the film remains and may do a ceaseless damage.

That film is what discolors—not the teeth. It is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea—a common and serious trouble.

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These facts have been known for years, but dental science found no way to effectively combat film. Now that way is found. Able authorities have proved it by careful tests. Leading dentists all over America are urging its adoption. And millions of teeth are now cleaned daily as they never were before.

The method is embodied in a dentifrice called Pepsodent.



dent. And to spread the facts, a 10-Day Tube is being sent to everyone who asks.

Based on Active Pepsin

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to constantly combat it.

The way seems simple, but for long it seemed impossible. Pepsin must be activated, and the usual agent is an acid harmful to the teeth. Now science has discovered a harmless activating method. And now active pepsin is embodied in an ideal tooth paste, modern in every way.

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Pepsodent
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Ten-day Tube Free

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Embroidered Summer Dress \$5.98

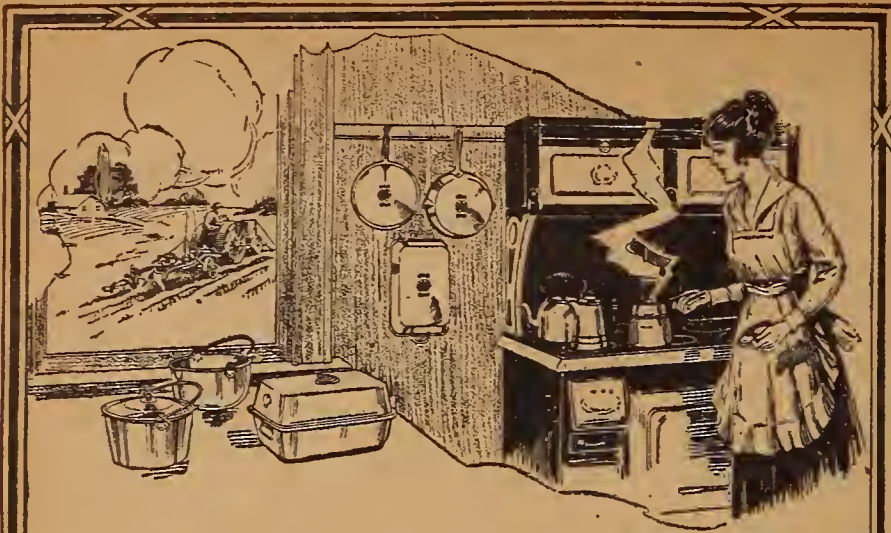
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Send Now Just your name and address—no money. I will send this money-saving, fashionable dress to you. When the postman delivers it at your door, pay him \$5.98 only. We pay the delivery charges. If it does not please you in every way, return it and we will cheerfully refund your money. Give size and color. Order by No. 919.

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"Wear-Ever" utensils are a pride to own and a joy to use. Cleanly and bright, they add to the cheer of the kitchen—help make it the attractive place it should be.

"Wear-Ever" utensils are made in one piece from hard, thick, sheet aluminum without joints or seams. Cannot crack, flake or peel—are pure and safe. Because of their enduring service they are the most economical utensils to buy. Divide their cost by the years they last.



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Look for the "Wear-Ever" trade mark on the bottom of each utensil

The Aluminum Cooking Utensil Co., New Kensington, Pa.

In Canada "Wear-Ever" utensils are made by Northern Aluminum Co. Limited, Toronto, Ontario.

Why We No Longer Dread Ironing Day

By Mrs. J. W. McConoughey of Ill.

WHEN I say in my first sentence that ironing day is no longer considered hard nor dreaded, I am sure I need give no other reason for wishing to tell you about it. We have quit agitating the help question, and do our own work—my daughter and I. We indulge in one luxury—having our washing done away from home. Right here I must give our washerwoman credit for the "first help" to easy ironing. She sends the clothes home in smooth bundles. If clothes are stuffed into the basket helter-skelter you will have many extra wrinkles to iron out.

I give particular attention to dampening the clothes, and prefer a regular sprinkler to my own hand. A five-cent aluminum tip fitted into a common bottle makes a good one. Clothes iron much easier when they lie overnight after being dampened. Where we cannot have them ready overnight we use hot water for sprinkling, and roll each garment tight. The warm water creates a steamy condition, and the tight rolling induces the dampness to penetrate all parts of the articles more quickly.

No towels except fancy ones need sprinkling. We let them lie in the basket here and there among the clothes, for one may be needed to cool the iron before doing a dainty waist. Dish towels, underwear, and stockings are smoothly folded and put away without ironing. Every garment is turned right side out when folding at night. It is a waste of time to do this while the hot iron stands waiting.

The Ironing Board—it needs to be spelled with capitals—must be the correct height to give one ease in working. I am 5 feet 4½ inches high, and our board, when in place, is thirty-five inches above the floor, sloping up a little toward the left. The linoleum is soft, but I always place a strip of carpet from the board to the stove, and my feet become less tired.

An essential to comfort is an office stool about 2½ feet high. I keep it near me, and often drop on it when straightening out lace or adjusting a collar for the iron. Many articles can be as easily ironed while sitting on the stool as while standing. You will be surprised if you have never tried this moment of rest to see how much less tired you are at the end of two or three hours.

NOW for the short cuts. No sheet or plain pillow slip need take an extra stroke to be well ironed—yes, a few. Lay the sheet folded four-double with selvage edges along the board, and iron these edges first. Then place on the board, now in eighths—having folded together once more—with hems uppermost. Iron napkins, handkerchiefs, a waist or shirt on this. When wishing to place the iron on the stand, which should be rather flat—not over one-fourth or one-half inch above board—do not lift it up and carry to the stand, but let it slide along over the sheet and iron as it goes, lifting only the point and allowing it to slide on to the stand without actually lifting it at all.

As soon as this hemmed end is smooth, turn back over it another hemmed eighth, and go through the same process. Repeated trial will enable one to become expert at folding back just right. Use one sheet only till it is smooth, for repeated ironing yellows and wears it. Iron only the four hemmed ends.

Pillow slips are not quite so easily managed. They may tend to slip up under inexperienced hands. A plain one can be completely ironed under three or four handkerchiefs. As you fold over the handkerchief with the left hand, after ironing it out flat, keep the iron going with the right hand on over the slip and its hem, and back again, to finish the handkerchief, never having lifted the iron off the board. With the finish of the kerchief that end of the slip is finished also. Move the slip along, iron another handkerchief, and repeat the process on other side of the slip. All are done in about the time it would have taken for the kerchiefs alone.

Cotton or cotton and linen tablecloths may be ironed with thin garments.

In the day of the stiff-bosomed shirt—ah, yes, it was forty-five years ago—I took

[CONTINUED ON PAGE 49]



Corn-Pestered?

IT'S as simple as A B C to rid yourself of painful corns or calluses. Two or three applications of "Gets-It" does the work. Put it on in a few seconds. Put your shoe and stocking right on afterwards. The soreness goes; discomfort stops. You can walk or dance in comfort.

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For Corns

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Interesting, instructive booklet, "The Story of Cheese," free with \$1.00 order. Write for particulars.

Chr. Hansen's Laboratory, Inc.
Little Falls, N. Y.

A Whole Evening of Musical Fun

[CONTINUED FROM PAGE 42]

son's necktie to another's, or changing some piece of furniture in the room, he must guess it by listening carefully to the music, which would tell him if he were "warm" or "cold."

This rather quiet game was followed by one more active. "Going to Jerusalem" is familiar to most readers, but may bear repetition. A row of chairs is placed in the center of the room so that they face alternately in opposite directions—one chair to one side, the next to the opposite side, etc. There should be one chair less than the number of players. The game is played with musical accompaniment. The musician will add to the interest of the game by varying the time of the march from slow and stately time to "double quick." The game starts with all players marching around the chairs. At any moment the music may stop suddenly. Whenever this happens, the players all scramble for seats. There will be one left without a

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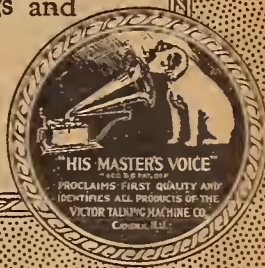
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seat. This player is henceforth out of the game, and retires to one end of the room, taking with him one of the chairs. This continues until there are only two players encircling one chair, and the one who secures it wins. Where two players reach a chair at nearly the same time, the chair belongs to the one who first reached it, or who is sitting more fully on it.

Something less hilarious seemed in order next, so the guests were each given a paper and pencil, and told to write in order the names of songs that were suggested by the "Musical Romance of a Southern Girl," which was read aloud. The pianist filled in the pauses with strains from the familiar songs.

Instead of presenting a prize to the person having the most numbers right, we tried the rather novel way of giving a prize of a booklet of "Old Familiar Songs" to the person having the fewest correct!

Finding partners for refreshments was the next thing. We had names of selections of familiar music written on one group of cards, and the author's or composer's name on another, and the point was to match these.

When partners were found, all joined in a grand march for ten minutes or more, before the refreshments were served.

Then after the refreshments came our national favorite, the Virginia Reel. And just before going home all gathered around the piano and sang the most loved of our familiar songs. We have always noticed that this "sing" sends the guests away from the "party" feeling they have had a most wonderful time.

NOTE: The "Musical Romance of a Southern Girl" and other suggestions for an "Evening of Musical Fun" will be sent on receipt of a stamped self-addressed envelope. Address Entertainment Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.



A Tribute to Our Dead A Comfort to the Living

ANY well-posted undertaker knows there is no such thing as a "dry grave"—

That the steel vault of air-tight "bell" construction is the only permanent protection against water, ghouls and collapse—

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Better Babies

IT SEEMS very ungrateful of me that I have not written long ago to thank you for the valuable advice contained in the letters sent me when I was an expectant mother. But, indeed, I am not ungrateful. The letters contained so much that was helpful to me that, while I was in some cases unable to follow your advice to the letter, I received much instruction and help which I sorely needed. The little patterns which I sent for were just what I wanted.

Baby arrived a little sooner than he was expected, but none the less welcome on that account. The doctor pronounced him "a perfect baby." And indeed we think him not only a Better Baby, but "the Best Baby." He is so strong and well, and so bright and happy! He weighed eight pounds at birth, and fifteen when he was nine weeks old. We have had no opportunity of weighing him since then, but he is growing steadily and gaining every day, and is the joy of our home.

I am enclosing the card you sent me, as I wish Keith enrolled as a Better Baby, and I am also enclosing 50 cents to cover the expenses of the monthly letters of advice concerning Baby's welfare. I know they will be of extreme value to me, as the other set of letters were. And for those others I wish to tender my most heartfelt thanks. Good luck to you in your endeavor to better the welfare of our little ones!

Mrs. D. T., Canada.

ENCLOSED find card announcing the safe arrival of our baby girl. I am ashamed to think I haven't sent it sooner, as you will see by the date our darling is almost two months old. She is just the sweetest baby in the world—at least we think she is. I need your help so much to raise her the way she should be raised a Better Baby. I have wished so many times that I had your letters. Will you please let me have them all, right from the first?

As I was a member of your Expectant Mothers' Circle I want to thank you for all the help and comfort I received from those monthly letters.

We live up in the mountains where there are no good doctors, and I had to go away from home to be confined, and just got back a couple of weeks ago with our little darling. I shall need your letters so much, as I won't have a doctor near to ask advice.

Enclosed find the small amount of 50 cents in stamps to cover postage on letters regarding our Better Baby.

I am so anxious to get



Why cry for a go-cart?

FARM AND FIRESIDE every month to read the Better Baby page.

I thank you again for your past kindness and hope to receive the mother letters very soon.

Mrs. L. A. K., California.

I AM indeed holding in my arms my real heaven-sent treasure—a baby girl, and I am perfectly delighted to call her a "Better Baby." She is a round, plump, well-formed, well-developed seven-pound "blessing."

I beg to acknowledge the receipt of all your most valued letters.

I looked forward each month to your counsel and advice with a great deal of interest and joy. And I read and reread the letters so much that many expressions were committed to memory. Once I thought I would hand them to a young expectant mother, a neighbor, but I value them and treasure them so that I am selfish enough to want to keep them very close to me.

Enclosed you will please find \$1—50 cents is to be used for my baby's registration fee in the Better Babies Bureau. I shall be delighted to receive monthly letters of advice to mothers mentioned in your letter. For the remaining 50 cents please send just as soon as possible the Baby Record Book.

I desire to convey to you my inexpressible gratitude for all your splendid advice. And I am anticipating great joy in the coming letters. Mrs. E. C. P., Tennessee.

I AM very sorry to be so late in reporting the arrival of our "best" Better Baby.

I am a graduate nurse of St. Luke's Hospital in Cleveland, which is about 100 miles north of here. I went there for my period of confinement, and was rewarded, after three weeks of waiting, by the arrival of our darling little girl.

Enclosed you will find 50 cents in stamps, for which please enroll me as a member of the Mothers' Club.

I have looked forward very eagerly to each of your letters, and have enjoyed them so very much, and made much use of many of your very good ideas. I know what a very great deal they must mean to a woman who has had no experience at all with babies.

All of the letters were helpful and inspiring, but I think the most wonderful one of all was the next-to-the last one, "What to do in case of emergency in the country."

You are certainly doing a very wonderful work. Mrs. C. C. C., Ohio.



"Spring has come," says young New York

What the Better Babies Bureau Is And how to secure its help

THE EXPECTANT MOTHERS' CIRCLE: Any woman eligible, whether she is a subscriber or not, may become a member, receiving each month a letter of advice on the care of herself and the preparation for her baby. Several practical little pamphlet circulars showing designs for maternity dresses and a common-sense layette are some of the helps sent with the letters. No matter at what period you enter, everything from the first month will be sent. No mention of the Better Babies Bureau is made on the envelopes in which the material is mailed. Enclose a self-addressed envelope with Fifty Cents in stamps, for postage, and state what month you expect your baby.

THE MOTHERS' CLUB: Every mother of young children is eligible and need not be a subscriber to join. Pamphlets, together with monthly letters of instruction on the care and feeding of babies under one year of age (covering such subjects as colic, constipation, weaning, teething, etc.), will be sent to any mother who sends Fifty Cents in stamps and states the age of her baby. There are also leaflets giving diet lists, and other helps for babies from one year of age to three years. This literature is all included in the Mothers' Club's monthly service, but if the letters are not desired the additional literature will be sent for Ten Cents. A self-addressed stamped envelope will bring a prompt reply to every inquiry. Address all inquiries to

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J. Z. LONG COMPANY
130 High St., Springfield, O.



Why We No Longer Dread Ironing Day

(CONTINUED FROM PAGE 46)

just twenty minutes to iron perfectly my brother's shirt. It was literally "stiff as a board." In this day of soft collars and cuffs one can do the job in three minutes. The collarband and cuffs can be done on the tail, so no extra stroke is needed there.

It sometimes happens that one wants in a hurry a waist or collar which has been laid away unironed. Sprinkle a heavy towel quite damp and spread it over the board. On this iron your bone-dry waist. The dampness penetrates the waist and the iron slips along more successfully than if the waist itself were sprinkled and ironed at once. But here is a necessary stipulation: After the waist is ironed all over on the damp surface, remove the towel and press the waist again quickly on the board or on a dry surface to remove any moisture left from the first ironing.

Yesterday, when preparing for our club meeting to be held here to-day, we discovered the library table doily of heavy linen was soiled. We washed it and, thinking to hasten matters a little, hung it up to dry instead of rolling it in a dry sheet right from the washing. In the hurry and scurry it was forgotten, and there on the prongs it hung this morning, as dry as a bone. I sprinkled a heavy towel, and on it ironed the doily successfully in a short time.

A PART of last week's ironing lay over two days. The weather being cool, I did not dampen the clothes. The cotton-linen mixed tablecloth was too dry. Instead of waiting to dampen and roll up again, I ironed a bundle of quite damp napkins on it. The dampness from them penetrated the cotton cloth which was underneath, and it came out as smooth as though properly damp in the beginning.

I must add a description of our handy ironing board, for it is a first aid to the ironer. The right-hand end of the board is hinged to the wall in such a position that when lowered ready for work it stands in front of a window which opens west toward our chestnut and maple trees. About one third distance from the other end a plain board, 36x6 inches, is hinged. When the ironing board is up out of position this "leg" falls against it. When in position for work it is the leg of dependence for the board. Near the left end on the edge of the ironing board is an eyelet, and on the wall at the same height is a hook such as one uses on a screen door. In a moment one raises the board and drops this hook into the eyelet and, lo, the board is out of the way as completely as though carried to a dark closet across the room.

A set of drying prongs, screwed to the door casing, is at the left, a little higher than my head. This easily spreads out like an open fan to hold the ironed clothes.

We use the old-fashioned irons, so we iron when a fire is needed for baking and cooking, thus saving fuel and heat. One can learn how to grasp the wooden handle lightly. Nothing is gained by holding it hard and tight, and the hand becomes tired.

Many a time have I kept an open magazine or a poem near my board. Ironing becomes mechanical, so why not be thinking fine thoughts as the iron goes to and fro?

It is a progressive and interesting operation to iron. A baby's dainty dress or a fine waist unfolds and develops under skillful fingers as a flower unfolds before the sunshine.

An Easy Way to Clean Silver

I WANT to tell the FARM AND FIRESIDE readers just how I keep my silverware beautifully bright without any scouring or polishing. I just drop it in a pan of sour milk and let it stand overnight. This removes all the tarnish, and does not injure the silver the tiniest bit. In the morning I wash and wipe, and the silver is shining.

If you are living where sour milk is hard to get, put an aluminum plate or pan in an enameled pail or crock (do not use tin or granite), dissolve a handful of washing soda in a gallon of boiling water, and pour over the aluminum plate and drop in your silverware. Each piece must touch the aluminum, it will remove the tarnish instantly. Lift out the silver, rinse, and wipe dry. If you haven't washing soda, you can use cooking soda and a tablespoonful of salt. This is not good for oxidized wear, as it removes the oxidizing.

Mrs. F. S., California.

Make Money in Your Own Home

THIS is a very unusual advertisement, due to a very unusual condition. We want thousands of new workers, men and women, to make socks for us at home on the Auto Knitter. Our need for these workers is very acute.

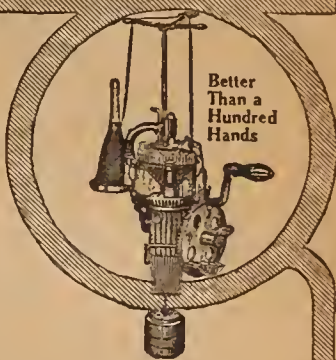
We are a large hosiery concern doing a world-wide business. Not only in The United States, but throughout the world, there is a great hosiery shortage.

Though we employ an army of home-workers we cannot fill our orders.

Regular Wages Paid

Positively not a "Canvassing Scheme"

This great demand is your own personal opportunity. It is your chance to make good money working in the freedom and comfort of your own home. Our Wage Contract guarantees a fixed pay, on a liberal piece-work basis. This work, agreement is positively not a "canvassing," "agency" or "open a store" scheme. It is a straight-forward Employment Arrangement. You can work full time or spare time just as you choose, right in your own home.



Better
Than a
Hundred
Hands

The Wonderful Auto Knitter

makes a sock or stocking—top—body—heel and toe—with-out removal from the machine. It is to hand knitting what the sewing machine is to hand-sewing. To have an Auto Knitter is as good as having many families of skilled hand-knitters working for you. Just one turn of the handle knits from 90 to 200 and more perfect, even stitches. Experienced workers make thousands of such stitches in a few minutes. Many of them report that they can make a sock in less than 10 minutes. We supply FREE the well-known Qu-No Quality Brand Yarn, made especially for The Auto Knitter. It is the Softest, the Warmest, the Strongest. We issue a Free Shade Card that contains samples of Qu-No Quality Yarns.

Write Today for Full Information

Read the testimony of our perfectly satisfied people. Learn of the profitable, pleasant and permanent opportunity for you in our organization. Know the future possible through The Auto Knitter; independence, freedom from bosses, time-clocks, work-hours, and working rules. Learn how you can also have your own home factory and sell your output both wholesale and retail.

As we have said before the great and unsatisfied world-shortage of hosiery is your own personal opportunity to make good money at home. Write us today. Send 2 cents postage to cover cost of mailing, etc.

THE AUTO KNITTER HOSIERY CO., Inc.
Dept. 264-A, 821 Jefferson Street, Buffalo, N. Y.

IF YOU WANT TO SELL OR EXCHANGE your farm, city property, land or patent, no matter where located, write me.

John J. Black, 71st St., Chippewa Falls, Wis.

MENDETS—WONDER MONEY MAKERS

Mend leaks instantly in all utensils, hot water bags, etc. Insert and tighten. 10c and 25c a package, postpaid. Agents Wanted. Collette Mfg. Co., Box 704, Amsterdam, N. Y.

You can be quickly cured, if you STAMMER

Send 10 cents coin or stamps for 70-page book on Stammering and Stuttering, "Its Cause and Cure." It tells how I cured myself after stammering for 20 years. Benjamin N. Bogue, 1356 Bogue Building, Indianapolis



"Now this is the place, Pa, where you buy that can of Effecto Auto Enamel! I won't ride in that old bus another day, unless you make it look like a regular automobile!"

Some wives are more persistent than others. But why wait till your wife drives you to it? You'll get a lot of pleasure and profit out of a can of Effecto Auto Enamel. It will make the old boat glow with pride—and you too!

Effecto
AUTO
FINISHES

Effecto Auto Enamel is the original and genuine auto enamel—easy-working, self-leveling and quick-drying. Not a paint, wax or polish, but a durable, long-lasting enamel finish that wears longer than the finish on most new cars. Made in nine attractive and usable enamel colors: Black, Blue, Green, Red, Brown, Yellow, Gray, Cream and White; also clear Finishing varnish, and Top & Seat Dressing for renewing and waterproofing all kinds of tops, seats and upholstery.

Choose the color you prefer or finish the body in one color, the chassis in another and the fenders in Black! You won't have to lay up the car for several weeks—a few hours of interesting work and a few dollars worth

of Effecto does the trick—24 to 48 hours for drying.

A small can of Effecto Black Enamel is mighty handy around the garage, for touching up fenders, body or chassis. Its habitual use prevents rusting and quick deterioration.

And here's another tip—if your top, of fabric or imitation leather looks gray and dingy and leaks a drop here and there, just spread a thin coat of Effecto Top & Seat Dressing over it. It will look like a regular top and you can take it out in a cloudburst and come through dry!

Send for Color Card and Name of Local Dealer

Effecto is sold by paint, hardware and accessory dealers everywhere. If you have any trouble getting the genuine Effecto Auto Enamel write us at once. We will see that you are supplied.

Pratt & Lambert-Inc. 169 Tonawanda St., Buffalo, N. Y. Canadian address: 115 Courtwright Street, Bridgeburg, Ontario.

MADE BY THE MAKERS OF PRATT & LAMBERT VARNISHES

Take a census of the bugs in you

You are full of bacteria—good and bad. Some microbes make you cross, sick-a-bed, or put you in jail. Others make you a good citizen—happy, decent, honest. Three ounces of them—billions—pass through your body every day. Dr. Robert W. Morris has studied microbes for thirty years. Take a census of yours. Don't go grunting around feeling sore—simply clean them up, and come back smiling.

Do men like brainy women?

Do outside interests unfit women for practical domestic life? What kind of wife does the college girl make? William Dudley Pelley has some great answers to these questions. Pelley married a suffragist, so he knows what he's talking about. His masculine views have a whimsical humor that will make you laugh even if you don't agree with him. And he wrote this story without telling his wife.

A "size-up" worth a million

If you want to take the measure of a man, don't call in detectives or phrenologists. Call in William B. Joyce, head of the National Surety Company. His judgment's worth a million. How does he go about it—tell the good risks from the bad? Wouldn't you like to know the kind of people to put your money on? His story will help you to get the right dope on the fellows you do business with.

How men queer themselves

Roger W. Babson, the statistician, knows a lot about the big men of the country—about their likes and dislikes, their generalship in the business "ring"—how men put big things over, how others queer themselves, and how they impress their employers and associates. You'll enjoy his new line-up of Mr. Average Business Man.

Can't use his legs but he has kick

He recently refused a job at \$40,000 a year. Charles Lee Cook has been paralyzed since childhood. But he is a great engineer by virtue of his sheer determination. One of the heroes who usually go unsung—the story of his life will give your heart a lift and renew your faith in human nature.

The April American Magazine

THE CROWELL PUBLISHING COMPANY

THE AMERICAN MAGAZINE WOMAN'S HOME COMPANION

COLLIER'S, The National Weekly FARM AND FIRESIDE

Bay Port Folks as I Know Them

[CONTINUED FROM PAGE 6]

wagging its tail, whenever she comes near.

Another time we were trying to get an ordinance through the town meeting, to keep cows off the road, and providing a pound for vagrant bovines to be interned in. For some reason Uncle Dave was opposed to the measure. I saw him looking out of the window in the direction of the bay, thinking hard. His eyes must have lighted on the little island two miles out, for he had an inspiration disastrous to our project. Ezra James was just then vociferously advocating the matter, and when he sat down to get his wind Uncle Dave sprang to his feet.

"Mr. Chairman," he said, and everyone subsided to listen. "Mr. Chairman, I move that we adopt the proposed ordinance, and buy Bay Island for a pound, and elect Ezra James pound master!"

It killed the effort stone dead. The spectacle of lean, gloomy Ezra James taking struggling, vagabond cows back and forth in a boat to Bay Island was too much for anyone's seriousness. Not until our next annual meeting could Bay Porters be brought to consider the project respectfully.

Yes, we have a good bit of fun, but life is not all laughter in Bay Port, any more than it is elsewhere. It has its shadows too. I said a few paragraphs back that some of our folks carried mysteries in their lives of which we can only conjecture. One of that small number is May Ransom.

The Ransom family was a large one—nine children in all—and from some roving ancestor they drew that restless impulse which we so often see scatter a family like a handful of leaves caught in a wind whirl.

One is in Montana, three in Canada, two in South America, and another in Australia, all of them farmers or ranchers, or wives of such, for they are a sturdy outdoor race. Only May and her unmarried brother, who has been all over the world in the navy, are at home. He is farming the old homestead, and May keeps house for him. Both mother and father are dead.

May, who was the youngest, grew up to be as beautiful a girl as I ever saw. She was tall and dark, with a sweet, gentle air about her that always made me think of the late afternoon sun laying long shadows in a garden of old-fashioned flowers—she had just that little touch of melancholy. When she was nearly twenty she went to Chicago, and stayed there three years. We heard that she was married, that she wasn't, that she was divorced, that she was dead, and then, one day, she came home—but not the May Ransom who went away.

We could only wonder what life had done to her out there in the distance, where it roars so dizzily between its high walls. All her sweet, wistful youth was gone, leaving her a woman, cold and silent, with a hard, deep hurt in her eyes. She told no one anything, nor did she ever attempt to take her old place in the community. Once a belle at our little parties, and never absent from church, she shut herself up in the big house among the spruces on the hilltop, going nowhere, seeing no one, only working.

OF COURSE, there were stories—ugly tales too, most of them. But in the heart of Bay Port there is no censure for what error may have been here, only pity. We think of her many times, as she is so often seen when any of us go to the old Ransom place, sitting by the window with her sewing and sometimes gazing out into the distance, but always with that terrible, hard sadness in her face. Then we think of her as the shy, sweet girl that went away from us—just yesterday it seems, so fast time flies. And we wonder what she sees, who it is that comes into her unhappy thoughts she will not speak.

Ah, well, Time may heal her hurt. But it hurts us that the city does such things to the flesh of our flesh which we give it. As Uncle Dave says: "They go down the road away from us. And they never come back unless they come back broken in body or soul."

Some of our mysteries, thanks be, have happier endings. There was, for instance, that one concerning Ella Queed's pigs.

Jim Queed died about two years ago, leaving his wife and one little boy 60 acres of land down by the creek, about half paid

for. Jim junior is as bright a youngster for his ten years as you ever saw, and Ella has more of what our folks call "git up and git" than is really good for a 120-pound woman. She and the boy have been running the place with no help, and would have come out fine if a June freshet hadn't backed the creek up into their corn both seasons since Jim died. You see, they had been on the place only three years before that unhappy event, so there was quite a debt over it, and not much equipment.

LAST March, Ella had a sow farrow, and she was depending on the nine pigs that came to meet her interest and help make a payment this fall. It was a slim hope from the start. The sow was a good grade Poland—one of the gentlest mothers I ever saw—but had been fed only corn and dish water through the winter, which is no ration for a future mother of healthy mortgage lifters. However, Ella had no alfalfa or skim milk for her, and felt that she could not afford to buy tankage. The result was nine pretty frail-looking pigs.

Two died just a little while after being farrowed, and most of the others looked like they had through tickets to the happy hunting grounds. Ella was about as discouraged a little woman as you ever saw.

"Why don't you ask Stubbs to come over and look at 'em?" Uncle Dave asked. He and I had stopped in on our way to town, being, like most other Bay Port folks, fully as concerned over those

pigs as if they were our own. I knew that Uncle Dave wasn't thinking Henry Stubbs could help much if he would come over, for all that he is our authority on hogs. You can't do much for little pigs like that. He just made the suggestion to keep Ella's hope going a little longer.

Henry Stubbs is as temperamental as a sorrel horse. He is a bachelor of about forty, who has been matrimonially angled for by at least half the girls in Bay Port, which hasn't mellowed him any, Henry being as opposed to wedlock as a cat is to bathing. "Do you think he'd come?" Ella asked, looking as frightened as if we had suggested sending for Doctor Mayo.

We didn't know, but we advised finding out, which course gave us cause for much thankfulness when we made our next visit, two days later. Ella met us at the gate, as happy as a lark.

"He came," she said, smiling all over and hustling us off to the pen like a thirteen-year-old skipping a rope. "Just gave me some kind of powder to put in Daisy's slop, and next morning you wouldn't have known the pigs were ever sick."

We took one look at the seven thrifty little rascals scampering about their pen like rabbits, then Uncle Dave and I looked at each other. It simply couldn't be done—unless Henry Stubbs was a wizard. But it had been done, for there were the pigs.

From that time Henry's reputation as a veterinarian grew and soared. Uncle Dave never said much, but I knew his shrewd old mind was putting two and two together and getting more than four. When he finally made the result known, it was only to me and under a strict pledge of neighborhood secrecy.

We were standing by Snyder's scales in town, and Henry Stubbs drove up with Ella's pigs in his wagon. They averaged 200 pounds apiece if they weighed a pound.

"Where have you seen that kind of hogs before?" Uncle Dave asked, stroking his whiskers and rocking on his heels as he does when mysteriously pleased.

I was trying to decide the same question, for the animals certainly had a familiar look. Suddenly the answer flashed into my mind.

"Henry Stubbs' Black Diamond stuff! He put some of his own pigs in Ella's pen that night!"

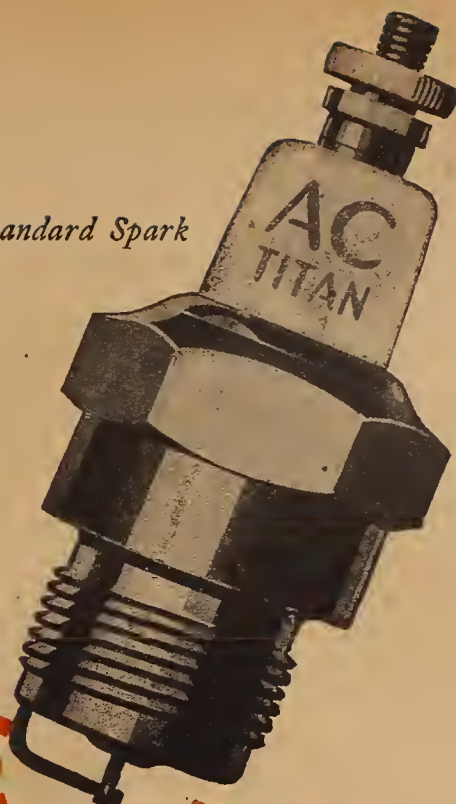
"Surest thing you ever said," Uncle observed. "That old sow of Ella's would mother a couple of orphan lambs. But if you ever tell anyone I'll poison your dog. Isn't it great to live in a neighborhood where a heathen old woman hater will do a thing like that?"

Indeed it is. How can life be monotonous when it is continually renewed from the hearts of those who live it? How can it be a drab level anywhere, with all the efforts

[CONTINUED ON PAGE 59]

The Standard Spark

Plug of the World



There is no evading this fact—the automotive industry has placed its stamp of approval upon AC Spark Plugs. The list of manufacturers below, who equip with AC, tells the story. Year after year these spark plugs have been standard equipment on America's finest cars. This, we believe, is the strongest reason why you should use them always.

Champion Ignition Company, FLINT, Michigan

These manufacturers use AC Spark Plugs for factory equipment

Acme Trucks	Bellanger Freres (France)	Commonwealth	Frontmobile	Independent Trucks	Menominee Trucks	Pan	Rutenber Motors	Swartz Lighting Plants
Acme Trucks	Birch	Coneatoga Trucks	F-W-D Trucks	J.V.B. Marine Motors	Meteor	Parker Trucks	Samson Tractors	Tiffin Trucks
Advance-Rumely	Bour-Davis	Continental Motors	Galloway Engines	Jackson	Midwest Engines	Paterson	Sandow Trucks	Tilga Tractors
Tractors	Braddon	Curtiss Aeroplanes	Gary Trucks	Johnson Motor Wheel	Millwaukee Gasoline	Patriot Trucks	Sanford Trucks	Titan Trucks
Threns Fox Fire	Daniels	Dart Trucks	Genco Light	Jordan	Locomotives	Perfect Power	Sawyer-Massey	Tower Trucks
Trucks	Bradley	Dart Trucks	Gilde	Kalamazoo Trucks	Minneapolis Motors	Sprayers	Tractors (Canada)	Trego Motors
American Beauty	Briggs & Stratton	Defiance Trucks	G. B. S. Motors	Kearns Trucks	Mitchell	Philanna	Saxon	Turner-Simplicity
American-La France	Motor Wheels (formerly Smith)	Delco-Light	G. M. C. Trucks	Kent Concrete	Monroe	Pierce-Arrow	Scripps-Booth	Tractors
Anderson	Brockway Trucks	Denhy Trucks (Canada)	Gramm-Bernstein	Mixers	Moreland Trucks	Pilot	Scripps Motors	Union Marine Engines
Apex Trucks	Buda Motors	Diamond T Trucks	Trucks	Keystone Trucks	Napoleon Trucks	Pioneer Tractors	Signal Trucks	Universal Trucks
Apperson	Buffalo Motors	Diehl Trucks	Gray Dort (Canada)	Kissel Kar	Nash	Pittsburgher Trucks	Singer	United Trucks
Appleton Tractors	Buick	Dodge Brothers	Hackett	Kleiber Trucks	National	Porter	Speedway Motors	Van Blerck Motors
Borgone Four	Bullock Creeping-	Domestic Engines	Hahn Trucks	Knox Trucks	Nelson	Premier	Standard "8"	Vim Trucks
Associated Engines	Grip Tractors	Domestic Gasoline	Hall Trucks	Koehler Trucks	Nelson & Le Moon	Ranger Trucks	Standard Trucks	Wallace Tractors
Atco Trucks	Cadillac	Pumping Engines	Harvey Trucks	Lalley-Light	Trucks	R. & V. Knight	Stamwood	Walter Trucks
Austin Mfg. Co.	Cameron	Dort	Hatfield	Leach Power-Plus Six	Netco Trucks	Red Wing Thorohred	Stearns-Knight	Ward La France Trucks
Available Trucks	J. I. Case T. M. Co.	Duesenberg Motors	Haynes	Liberty	New Britain Tractors	Motors	Stearns Tractors	Westcott
Very Tractors	Chandler	Dynelectric Plants	Hendrickson Trucks	Locomobile	Noble Trucks	Reo	Sterling Engines	White
A. & T. Tractors	Chevrolet	Eagle Tractors	Herschell-Spittman	L. M. C. Trucks	Oakland	Re Vere	Sterling Trucks	White Hickory Trucks
Tractors	Chicago Trucks	Economy	Highway-Knight	Maccar Trucks	Old Reliable Trucks	Riker Trucks	Stewart Trucks	Whitney Tractors
Black-Hawkeye	Clark Tractors	Elmira	Trucks	Malbohm	Oldsmobile	Roamer	Stockton Tractors	Wichita Trucks
Trucks	Cleveland	Essex	Holt Tractors	Marmon	Onelda Trucks	Roberts Motors	Stoughton Trucks	Wilson Trucks
Bessemer Trucks	Cole	Excelsior Motorcycles	Howell Tractors	Master Trucks	Owens Light &	Robinson Fire Trucks	Straubel Engines	Wisconsin Motors
Betz Trucks	Collier Trucks	Fairmont Ry. Motors	Hudson	Maxim Fire Trucks	Power Plants	Rock Falls	Sullivan Trucks	Wolverine Tractors
	Comet	Federal Trucks	Hupmohle	Maytag	Packard	Rowe Trucks	Super Trucks	Woolery Ry. Motors
		Flour City Tractors	Hurlburt Trucks	McLaughlin (Canada)	Paige		S-S-E-Co.	W. S. M. Motors

Fairbanks-Morse "Z" Farm Engines



OVER a quarter-million modern farmers know and use the best engine. Surely in their wise choice there is a message that vitally concerns you, also.

Such widespread acceptance of the Fairbanks-Morse "Z" Engine was not achieved by claims alone. Nor by the high repute of the house which manufactures this phenomenal farm engine. Over \$15,000,000 was paid by farmers for "Z" Engines because of Quality which makes for service—and performance—and surplus power—and enduring farm engine dependability.

Magneto ignition service from more than 200 Bosch Service Stations. And thousands of "Z" dealers furnish Fairbanks-Morse service to every engine buyer. See your dealer today.

Prices: 1½ H. P. \$75.00, 3 H. P. \$125.00, 6 H. P. \$200.00.
All F. O. B. Factory.

FAIRBANKS, MORSE & CO.
MANUFACTURERS CHICAGO



Let Your Engine Do It

By R. B. Rushing of Illinois

THE much-used slang expression of "Let the women do the work" might well be paraphrased to, "Let the engine do the work."

No other single factor has been more potent in making every penny and every minute and every stroke count in farming. The gasoline engine has lifted from the shoulders of the farmer many a burden.

It has given into his hands a means of dispensing with man power, the horse, and forces of the wind. It has been a suggester and a creator of new and important methods of utilizing power on the farm for greater efficiency and larger profits. The man with the engine on the farm is the antithesis of the man with the hoe.

The gasoline engine hooked up to a multiplicity of devices and machines is changing the farmer to a master mechanic. I know of no better testimony to the manner in which the gasoline engine has revolutionized the lives of many farmers than the following story told me by a neighbor the other day:

"My father used to feed cattle, and he always shelled all the corn he fed, using self-feeders. The cobs were used for fuel, and they were very nice to start fire with. He used a two-hole eight-horse corn sheller.

"On account of old age he moved to town. The corn sheller was left on the farm. Often when I wished to shell corn the track would be very muddy for the horses, and the old machine would run hard, and soon I decided to investigate the merits of the gasoline engine.

"I was really expecting to get about a three or four horsepower engine, but I secured the prices on different sizes, and ordered one rated at seven horsepower. They sent a man to install and start it, it being one of the first machines, and they wished it to be satisfactory.

"I have been running the engine ever since, with very little trouble. I run a

four-hole corn sheller, a feed grinder, and two pumps, and I can have water for my stock whenever I want it, wind or no wind. I grind a great deal of chicken feed in the spring for my neighbors, and lots of hog feed in the fall. I charge enough for this service to pay for the gasoline and make a small profit.

"I would not do without the engine for almost any price. Recently I secured a two horsepower gas engine to run the churn, washing machine, and the house pump for the well, which is 45 feet deep. I have a double-cylinder force pump and a hose which in case of fire can be attached to the engine. Blue Monday no longer exists with us, for while the engine is running the washing machine my wife can rest and read the news."

Every grain grower has painful recollections of the inconvenience, damage, or actual loss of a small grain crop because the ground was so soft that the binder could not be pulled through it. Now just think, a little engine—a specialist—is mounted on the machine and furnishes the power to run the machinery! This removes the greatest part of the horse-killing and nerve-racking draft from the horses, and reduces their work merely to that of getting the machine over the ground. A motor-driven binder often makes it possible to save crops that would otherwise go to waste. These things I have experienced.

I am always glad to meet men who enthuse about engines. They have helped me so much that I like to know of others learning their use. Their adaptability to farm work is practically limitless. Their simplicity and ease of operation commend them to those unfamiliar with machinery. And their economy of operation is sufficient to convince the most skeptical. I have never seen any farmer that has thoroughly tried them out who would think of putting them aside, and that alone is sufficient proof for thinking people.



This is Ben Lilly of Chloride, Arizona, and his pack of hounds

Being Doubly Sure

PUT one on those outside doors that are loosely locked. Strong, easily applied these bolts give double protection to life and property.

No. 1078 here illustrated is made in sizes ranging from 2½ to 6 inches.

STANLEY

Barrel Bolts

THE STANLEY WORKS, New Britain, Conn.
New York, 100 Lafayette Street Chicago, 73 East Lake Street
Have you seen our "Three Butts to a Door" book?



Lions Hide When Lilly Comes Around

BEN LILLY of Chloride, Arizona, is the surest shot of the 300 hunters and trappers employed by Uncle Sam to kill the wild animals that prey on the livestock of the Western range country. Although sixty-five years old, he is as active as a boy, and in the last six years his quick aim has brought down no less than 167 mountain lions and 65 bears, including several grizzlies.

Though born of a well-to-do family, Lilly early felt the call of the wild, and started off through the Louisiana canebrakes with a rifle and a 60-pound pack. His reputation as a hunter soon spread, so when the late Colonel Roosevelt started on his famous bear hunt in the Louisiana woods Lilly was chosen as one of the guides.

Lilly was once attacked, while alone, by a mountain lion that had been angered by his hounds, and, while he had only a four-inch knife, he killed the infuriated beast after a desperate struggle. He says that his great physical strength and endurance is due to the fact that he has lived out of doors all his life, and because he has never smoked or used alcohol. Furthermore, he does not believe in working on Sunday, so many a wild beast that hears of his deadly aim has a chance to "vamoose" over the week-end.

On a basis that a wolf kills \$1,000 worth of stock every year, a bear and mountain lion \$5,000, and a coyote and bobcat \$50 each, it is estimated that the 300 professional hunters and trappers have saved Western ranchers nearly \$5,500,000 in the last three years, as they have killed 70,713 predatory animals in that time. The pelts from these animals brought in about \$100,000, which goes quite a ways toward helping the Government keep up the work. J. A. B.

WINCHESTER

1866

1920



NEW PRODUCTS AND RETAIL STORES

by J. E. OTTERSON

PRESIDENT, WINCHESTER REPEATING ARMS COMPANY

FOR fifty-three years the Winchester Repeating Arms Company has made and marketed guns and ammunition.

During this half century the Winchester Company has endeavored sincerely to give every customer, large or small, the finest merchandise it could make.

And it has tried to deal fairly in all ways with every patron.

Winchester now enters two new fields of effort:

First, the making and marketing of Winchester Cutlery, Tools, Fishing Tackle, Skates, Flashlights, and other new products.

Second, the selling of Winchester products through Selected Dealers and the operation of Winchester Retail Hardware Stores.

We believe that the manufacturing personality which has built world-wide respect for Winchester Guns and Ammunition will produce a character in Cutlery, Tools, Fish-

ing Tackle, etc., that has not been offered the public before.

And we believe that Winchester organization methods applied to Winchester Hardware Stores will develop a retail service unprecedented in the merchandising of hardware and sporting goods.

This new Winchester plan is one of the largest undertakings in the history of American business. Its object is economic: To manufacture hardware and sporting goods in volume and fully up to the finest traditions of Winchester, and deliver them to the consumer at the lowest possible cost.

We hope and believe that this plan will benefit the American public; likewise all of our competitors.

The **WINCHESTER** Sign is appearing on the leading retail hardware stores. This sign will be found to stand for the same sincerity in merchandise and service which for half a century has enriched the name Winchester throughout the world.

Turn Your "Stump" Land into "Crop" Land



YOU can't grow crops on land occupied by stumps and boulders. They not only rob you of valuable space but, in forcing you to plow around them, rob you of time and energy. And they often cause serious injury to men, horses and machinery.

One season's extra crops from land occupied by stumps and boulders will in many cases more than pay for their removal with



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110 Bell St., Bloomington, Ill.



They Said He Would Fail, But He Came Out on Top

By John H. Casey of the University of Missouri



Glenn G. Davis

FIVE years ago Glenn G. Davis was a struggling freshman trying to work his way through the University of Missouri College of Agriculture. To-day he has one of the best herds of purebred Holstein cattle in the Mississippi Valley. He has a dairy farm one

mile north of Columbus, Missouri, which supplies that city with 100 gallons of milk a day. His fine herd of 75 to 80 cattle is the result of five years of hard work, good judgment, and good management.

Glenn Davis had never worked on a farm a day in his life before he entered college in 1914 with a few dollars in his pocket. He has proved to his own satisfaction that a town boy can make a success of farming if he has the stuff in him and is willing to use his brains and his brawn.

He got his start in the dairy business his second year in college, when it was necessary for him either to "sling hash" or make money in some other way. He bought a Jersey cow for \$75, and kept her in an old barn out back of the house where he roomed. He milked the cow night and morning, selling his product to neighbors. He added to his original "college cow" two others, and at the end of three months he made a plunge in renting a 20-acre place near Columbia, where he might enlarge his operations.

Then it was that he saw he wouldn't get anywhere with scrub cows, so he sold two of his scrubs and bought one good Holstein in their place. As his next investment he bought an old horse, which he drove back and forth to school. Practical farmers laughed at the college boy, and said there was "another one who would soon learn that farming with cows was harder than farming with books." They freely predicted that cold weather would see him "giving up the ghost."

But Davis stuck. When cold weather came he added a few more cows to the spotted herd. By the time he was a junior his dairy business had become so large that he could not do his studies justice, so he decided to give his entire time to building up a pure bred-herd and a commercial dairy worthy of the name.

Davis says he did not go into the dairy game with the idea of making a business of it. He attended the college of agriculture with the idea of learning something about livestock. He moved to his present location so he might have room to spread out a little. There he lives with his mother, who keeps house for him. He employs four men regularly, winter and summer, to do the milking and all the other labor. He farms 120 acres of land, having most of this in pasture and grass, and buying the bulk of his feedstuffs.

He markets his milk direct to the con-

sumer at 15 cents a quart, using two wagons, and he expects soon to increase his output. His milking herd consists of 35 Holsteins. His milking herd gets the following feeds in the following proportions: 1,200 pounds corn, 400 pounds bran and oats, 300 pounds linseed meal, and all the alfalfa hay the cows will eat. He has a silo on the place, but it will not hold enough silage to run the herd for more than a few weeks. He finds it almost impossible to get a crew of men organized at silo-filling time for putting the corn in his silo. Mr. Davis is a stickler for attention to the individual cow and her wants and needs. He believes a dairyman gets best results by feeding according to a cow's individual temperament.

DAVIS' herd has been attracting considerable attention recently through press notices of his winnings at some of the big state fairs and at the National Dairy Show at Chicago. His showherd of 13 animals won 188 ribbons in 1919. He had his stock in the ring at the Missouri State Fair the two Kansas State fairs, the Oklahoma State Fair, and at the Ozark Stock Show.

Campus Chief Bis made the greatest record, being declared grand senior cow and grand champion cow at all of the state fairs, and taking third honors at the National Dairy Show. She is a four-year-old cow valued at \$3,000 to \$5,000. He bought her as a yearling for \$250, making the selection from the University of Missouri college herd. Her pedigree shows her to be the double granddaughter of Missouri Chief Josephine, one of the greatest milk producers of any breed.

Alice Clothilde Piebe took next highest honors of the individuals in Mr. Davis' herd, winning first place in her class at all of the state shows except at Oklahoma, where she stood second. She was out of condition at the National Dairy Show in Chicago, and was not shown. Sir Korndyke Hengerveld De Kol, Jr., the Davis' herd bull, was adjudged senior champion at the Ozark Show.

Davis' entire herd is given the tuberculin test once every year. New cows are kept in quarantine until tested, and declared free of disease before they are turned in with the herd.

Cleanliness is emphasized about the milk-room and about the persons of the men who do the milking. Everything is kept in a sanitary condition. The milk is chilled immediately upon coming from the barns, when it is placed in cold water. Then it is transferred to chipped ice, where the chilling process is completed.

Davis is twenty-seven years old, the owner of his own herd of cows, a successful breeder and showman, and ambitious of going into dairying even on a larger scale. He missed getting his college degree, but he figures the momentum of an early start is worth something to him, and he may find time to get his degree later.

Total production of gold in the world since the discovery of America to beginning of 1918 was 823,374,366 ounces, valued at \$17,020,665,678.



In a sylvan dell on the Glenn Davis Farm, Columbia, Missouri

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 how to prevent dead chicks in shell; get bigger hatches; stronger chicks; more fertile eggs; prevent bowel trouble; dead chicks and to promote growth, besides how to get big egg yields and select layers and slackers is all explained in a new bulletin which will be sent free to all who write Professor T. E. Quisenberry, of the American Poultry School, Department 267, Kansas City, Missouri.

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Freight Prepaid East of Rockies & allowed on express. Guaranteed. My Special Offers provide ways to earn extra money. Order Now, or write for book "Hatching Facts."—It's Free and tells all. Jim Rohan, Pres. Belle City Incubator Co., Box 100, Racine, Wis.

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 Has many colored plates of fowls true to life; tells all about chickens, incubators, poultry houses, etc. Price 20 cents. Money back if not satisfied. C. C. Shoemaker, Box 962, Freeport, Ill.

"BABY CHIX" 10,000 per week after Feb. 1. 20 varieties, order early. Write for price lists and order blanks. **THE SPENCER HATCHERY** Spencer, Ohio

DAY OLD CHICKS
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PLANS FOR POULTRY HOUSES.
 ALL STYLES, 150 ILLUSTRATIONS, SEND 10 CENTS. INLAND POULTRY JOURNAL, Dept. 10, Indianapolis, Ind.

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 Foy's big book tells all about it. Contains many colored plates—an encyclopedia of poultry information, poultry houses, feeding for eggs, etc. Written by a man who knows. Sent for 5 cents. Low prices, fowls and eggs. **FRANK FOY Box 4 CLINTON, IOWA**

Baby Chicks
 20 leading varieties, day old chicks. Safe delivery guaranteed. Postpaid. One of the largest and best equipped hatcheries in the United States. Catalog FREE. **Miller Poultry Farm, Box 502, Lancaster, Mo.**

For You GOOD BOOKS
 FOR FULL PARTICULARS SEE PAGE 41

BEST FOR BABY CHICKS

3 Pans 50c POST PAID 6 Pans \$1

Fit any Mason Jar—Easy to clean—Sold by **AMERICAN POULTRY JOURNAL, 52 Peterson Bldg., Chicago**
 World's Oldest—Largest—Best Poultry Paper—60 cents a year
 Price increases July First—Order today.

Have You Ever Tried Raising Guineas?

HOW many of you farm women have ever tried raising guineas? I find it a profitable addition to the farm poultry industry, which is in itself a side line to the various other activities of farm life. I always keep a flock of about a dozen guineas consisting of about nine hens and three males, and each season raise from 50 to 100 young. Never keep a guinea hen after the third year, for she lays the best while young.

The guinea eggs are put under my Barred Rock hens, for I am more successful with chicken mothers for the broods than with the guinea mothers. It takes twenty-eight days for the eggs to hatch, and the wee birds must be very carefully tended during the first ten days. Dampness and chill are fatal, and they are so tiny that they can slip through the meshes of the ordinary chicken wire. I utilize the old screening taken from doors and windows for their coops, and let them out during the middle of the day only, with the mother hen confined, until they are two weeks old. Feed them as you would little chickens, starting them on pin-head oatmeal, and gradually changing to a commercial chick feed or any cracked grain mixture.

The next critical time in their lives is when they are changing the earlier feathers of a brownish hue to the Quaker gray of the adult bird. Feed them during this period, otherwise they will seek their own living on range, where they destroy innumerable bugs and insects in the fields and gardens, and they do not scratch as a chicken does.

Some people dislike their strident cries, but they utter these only when frightened, or when driving away marauders, such as hawks, crows, stray cats, or dogs. The usual call of the hen is the contented "Buckwheat, Buckwheat!" a call that blends in with all the other barnyard sounds. In cold weather I allow the guineas to roost inside the chicken houses, but on the first warm days they usually will begin staying outside on their own accord, perching aloft in trees or on roofs, from which vantage point, they are ever ready to alarm the sleeping family if anything or anybody skulks about the barnyard. They are a good burglar alarm, easily installed and never getting out of order.

AS TO the profit in raising them, each hen will lay 90 to 100 eggs a season, beginning in April or early May. These eggs are just as good to use or your own household as the chicken egg, and this will leave all the hen eggs to go in the market basket. As the egg is slightly smaller than the hen egg, I usually use in the proportion of three for two in the cooking recipes, although I do have good success in using them in just the same proportion as the hen egg. The guinea is fed more cheaply than the hen, so that its egg is a cheaper substitute for the egg of the hen, and not a bit less nourishing. The young stock find a ready sale, especially in a city. I sell them direct to a an athletic club in the city a hundred miles away, at prices that have ranged through the years from 75 cents to \$1.50 a pair. I would advise you to write to the steward of any well-known club in the nearest city rather than try to sell them to a local dealer.

The hens will begin at first to lay in the same nests with the chickens, but as soon as the grass grows they list to the call of the wild and steal their nests out in the fields. But, as the males always stand on guard while the hens lay, the locality of the nests is not hard to find. Then the hens give a peculiar cackle when they have laid, one that is never given at any other time, and once heard will always be recognized. The whole flock will usually lay in one or two nests, but do not remove the eggs every day, or they will change the nest. I usually allow at least half a dozen to accumulate before I gather them.

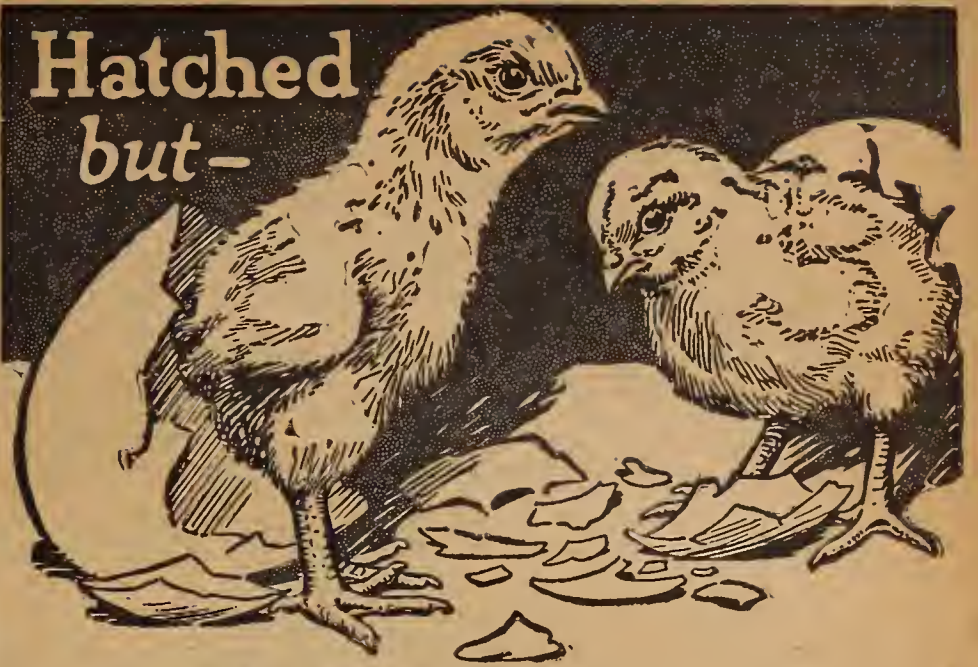
And now just one more item in their favor: their wings or breasts make beautiful hat trimmings, and are acceptable gifts to city friends.

BERTHA L. SMITH, Ohio.

Washing Spoils Eggs

EGGs should not be washed, as this removes the gelatinous film of the shell that keeps out air and germs. The nests should be kept clean so that the eggs will have no chance to become soiled, as removing dirt by washing will allow molds and germs to enter the egg and hasten its spoiling. **North Dakota Agricultural College.**

Hatched but—



How Many Will You Raise?

The loss in little chicks that die the first few weeks after hatching amounts to millions of dollars each year. Everybody must cut down the losses and increase production to the limit this season. How many chicks do you lose from **Gapes? Diarrhoea? Indigestion? Leg Weakness? Weakness from Rapid Growth of Feathers?** Prepare them to withstand little chick ailments by feeding

Dr. Hess Poultry Pan-a-ce-a

Remember that disease takes the weaklings—not the strong and healthy. And remember that indigestion is at the bottom of many little chick ailments.

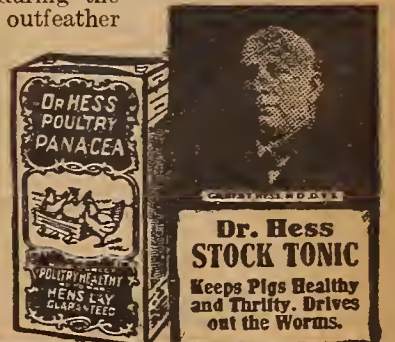
Pan-a-ce-a prevents and cures gapes. Pan-a-ce-a prevents and cures leg weakness.

Pan-a-ce-a regulates the bowels. Pan-a-ce-a produces appetite; it promotes digestion.

And remember good digestion is most essential during the rapid growth of feathers. A Pan-a-ce-a chick will outfeather a non-Pan-a-ce-a chick every time.

Your dealer is authorized to supply you with enough Pan-a-ce-a for your whole flock, with the understanding that it's to prevent and cure **Gapes, Indigestion, Diarrhoea, Leg Weakness**; that you are to see marked results during the growth of feathers; otherwise, he will refund every cent you have paid. 30c, 75c, and \$1.50 packages. 25-lb. pail, \$3.00; 100-lb. drum, \$10.00. Except in the far West and Canada.

DR. HESS & CLARK, Ashland, O.



Dr. Hess Instant Louse Killer Kills Lice

It's Cheaper to Raise the Chicks You've Got

than to hatch more and lose time and money. It simply means right feeding and right digestion—health and growth. And the easy way to be sure of both is to give them the ideal feed for little chicks:

Pratts Buttermilk Baby Chick Food

This "baby food for baby chicks" contains exactly the things most needed to build bone, muscle and feather, to prevent common chick diseases, to make chicks live and grow fast. **C. E. Brett, Dept. of Poultry Service, Rhode Island State College, writes**

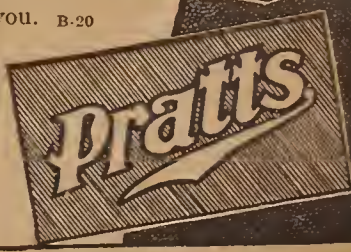
"I have used your Baby Chick Food with the best success and would gladly recommend it to anyone wanting such food. I not only used it for baby chicks, but for those five to seven weeks of age."

Test Pratts Buttermilk Baby Chick Food at our risk:—
"Your Money Back if YOU Are Not Satisfied"
 Sold by 60,000 dealers. There's one near you. B-20

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Pratts Animal and Poultry Regulators and Remedies, Hog Tonic, Cow Remedy, Dip and Disinfectant.



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All sizes at proportionately low prices.

Direct From Galloway's Factories

That's the reason for this low price. This saves you the difference between my price and the price of the high-priced separators. I cut out all waste and sell you at this rock-bottom wholesale figure. You get your new Galloway Sanitary right fresh from my factory floor. You buy in the most economical way—the modern way of doing business.

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Test one for 90 days' trial. Has strong, sanitary base; tank of pressed steel; heavy tinware; sanitary bowl; discs separate from each other for washing. Takes only a few of them to skim a lot of milk. Cream pail shelf and bowl vise combined with hinge for lowering. High carbon crank shaft (just 50 revolutions per minute). Oil bath and sanitary drip pan.

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without laying up your horse. Does not blister or remove the hair. ABSORBINE penetrates quickly and is healing, cooling and soothing—strengthens and invigorates tired, lame muscles and tendons—allays pain and inflammation—reduces soreness and lameness.

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Mr. Fred White, Box 676, Payne, Ohio, writes: "I purchased a bottle of your ABSORBINE and used as you directed. The puff all disappeared before I had the bottle quite all used up."

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which gives valuable information about the care of horses and cattle. It is well worth having and is yours for the asking without expense or obligation.

ABSORBINE, \$2.50 a bottle at druggists, or postpaid. Safe delivery guaranteed.

W. F. YOUNG, Inc., 23 Temple St., Springfield, Mass.

Biddies Help Boys Through College

WHEN three Connecticut youths from Goshen started for college last fall their baggage included all the equipment that the average "freshie" takes with him when he enters the halls of learning. But aside from the regular paraphernalia—pillows embroidered by sister, high-school diploma framed and ready to hang, photograph of best girl to grace the dresser, and the cake made by Mother's loving hands—each of these lads took about 100 pullets. Yes, chickens, and live ones, the kind that pay their own way. These boys carried along a poultry flock because the Connecticut Agricultural College at Storrs had just consented to a plan whereby three "\$1,000 poultry club" members might bring their birds to college with them to help pay their owners' way.

The state leader of the boys' and girls' club work in Connecticut believes in setting before the boys and girls in his territory definite goals. A group of boys are organized into a club, and they take as their aim the raising of a ton of pork in a year, or making \$1,000 profit on a definite amount of poultry in the same length of time.

Under good management, 300 to 400 laying hens should bring in a profit of \$1,000 in one year. A club organized for the purpose of making \$1,000 may have any number of members, but the aim in profit per bird is to be the same in each instance.

The first club of this kind was organized in Goshen, Litchfield County, in November, 1918. It has eleven members, with ages ranging from eleven years to the three of college age. After much discussion the Goshen club, in order to standardize the breed of its flocks, adopted one breed—the Single Comb White Leghorn. In August, 1919, this club's profits had passed the \$1,000 mark, with two months of this year remaining. West Hartford organized the second club of this type. The Goshen club is in a farm community. The West Hartford club is in the suburbs of Hartford. A contest was held between the clubs at the Goshen Fair, to decide which club should demonstrate at the East-

ern States Fair at Springfield, Massachusetts.

Each member of these clubs keeps record sheets on which are entered the number of hens, the number of eggs produced, the amount of each kind of feed given, and the total cost. These sheets are turned in at the monthly meetings, and the records are checked up. As one poor individual record will drag the club record down, every flock is expected to do its full share. If it does not, the other members study the records until they find out the reason why, and then work together to help improve the erring flock.

Three boys—Gary Miles, Clarence Vail, and Sherman Ives—belonging to the Goshen club wanted to go to college last fall, and only one had the money. The state club leader put on his thinking cap, and decided to see if an arrangement could not be made with the college authorities whereby a club winner could use the very line he had been successful in to pay his way through college. The college authorities consented, and so all three Goshen club boys got to go to college. They brought with them 225 early-hatched pullets. Housing and yarding in the college poultry houses is furnished for a reasonable rental, and feed is bought through the college at wholesale rates.

It is estimated that a flock of approximately 100 birds should clear its owner from \$250 to \$350 a year. At the close of the college year the

birds will probably be shipped back to the homes of the boys, where they can be cared for during the vacation months while the boys help with the regular farm work. Plans have been made by the college at Storrs whereby three poultry club members from "\$1,000 poultry clubs" may enter each year on the basis of achievement, and have the opportunity of paying their way through college by keeping their own birds.

The college, by giving the finest kind of a scholarship—the opportunity for a boy to earn his college expenses—is at the same time assuring itself of obtaining boys who will be a credit to the institution. H. S.



From left to right: Gary Miles, Clarence Vail, and Sherman Ives—three Connecticut boys who are working their way through college by raising poultry



Here are the boys with their prize-winning hens on the way to the Connecticut Agricultural College. Obviously, there is no need to worry about their not staying on the farm

Why I Grow Forage Crops

YEARS ago forage crops were considered of very small importance, and their true value was practically unknown to many landowners. Times, however, are changing, and many good things have come to light through absolute necessity. Among these are our different kinds of forage crops.

Years ago I tried out the different kinds of forage crops that I found we could grow. My work at that time was more of an experimental nature, but some of the lessons learned from small plots have been of inestimable value to us. I have learned something of the real feeding value of these crops, and have always found them to be of value when handled properly.

There is nothing that helps more to make hog-raising profitable than a good forage crop. I firmly believe the time is now at hand when we will not find it profitable to raise hogs without an abundance of good forage. Rape makes good forage for hogs. The advantage of rape is that it can be

grown continuously throughout the growing season.

In the past we have aimed to prepare only sufficient acreage for the hogs. However, other stock will benefit greatly if the acreage is large enough. This will depend largely on the season. When the season is favorable, a great crop of forage can be grown from a comparatively small acreage.

I like red clover because of its high feeding value, and because it can be readily worked in with other crop rotations. For many years past it has furnished us with an abundance of hog and cattle pasture. In order to grow red clover successfully, the land must be sweet, well drained, and fairly rich.

Another forage plant that I have found to be worthy of more than passing notice is the cowpea. Cowpeas make a good grazing crop, their feeding value is high, stock love them, and I have found the crop an easy one to grow. Cowpeas always give us a satisfactory growth, even on ordinary ground where other forage crops have failed. H. W. S.

\$19.95 Sent on Trial Upward American Cream SEPARATOR

Thousands in Use

giving splendid satisfaction justifies investigating our wonderful offer: a brand new, well made, easy running, easily cleaned, perfect skimming separator only \$19.95. Skims warm or cold milk closely. Makes thick or thin cream. Different from picture, which illustrates our low priced, large capacity machines. Bowl is a sanitary marvel and embodies all our latest improvements. Our Absolute Guarantee Protects You. Besides wonderfully low prices and generous trial terms, our offer includes our—

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Whether dairy is large or small, do not fail to get our great offer. Our richly illustrated catalog, sent free on request, is a most complete, elaborate and interesting book on cream separators. Western orders filled from Western points. Write today for catalog and see our big money saving proposition.

American Separator Co., Box 1058, Bainbridge, N. Y.



Shall I Buy a New Car This Year

By Jerome T. Shaw

BUY a new automobile" is the advice offered by the veteran car owner to the prospective motorist who is contemplating the purchase of a used car. Every year thousands of persons join the army of motor-car owners over the used-car route; and while many have been perfectly satisfied with the experience gained at the wheel of a car that has had its "breaking in," there are a great many who have a different tale to tell.

Assuming that you do purchase a used car, you have but one important factor in your favor; that is, low depreciation. If you buy a car that is two years old, it has already lost about 60 per cent of its market value; that is, if it originally listed at \$1,000 it should be now worth in the neighborhood of \$400. After a third year its rate of depreciation is not so great, and you may take this two-year-old car, run it for another year, and then sell it for 20 per cent under what it cost you. In other words, you could have the use of the car for one year for about \$80 under normal conditions.

If you bought a new car in the same price class, it would have depreciated about 40 per cent, or \$400, at the end of the first year's service. That \$80 against \$400 is the big thing in the favor of the used-car buyer. But—

During the year that you have had the used car you have had no guaranty from the seller that it would stand up, and it is more than likely that defects which were not apparent at its purchase have become expensively obvious after the first few months of service. Used cars rarely carry complete equipment, and to get the real joys of motoring it is necessary that the car be fitted with those devices that add to your comfort and convenience. Many of these are included as standard equipment with the new car, but the used-car buyer often has to add them.

USED-CAR advertisements calling attention to the "good" condition of the tires are common, but one seldom sees "all new tires" mentioned. "Good" in the tire world covers a variety of qualities which, when measured in mileage, may range from 300 to 1,000 miles. Six Sunday trips of 150 miles each, and the used-car buyer may have to buy again.

Just as soon as a new car is driven away from the dealer's showroom by the purchaser, it becomes a used car, and depreciates 25 per cent in value. At the end of the year it will be valued at 60 per cent of its original list price, or thereabouts. During this year, however, you have had the service facilities of the manufacturer and dealer at his call—a generous portion of it without cost; you have had the maker's guaranty for ninety days at least; you have had a car completely equipped with new accessories and attachments; and your tire expense has been proportionate with the use of his car. In addition to these advantages, you have a car that still retains an appearance of newness, and one that, with due care, should be in better mechanical condition than when in the first flush of its youth.

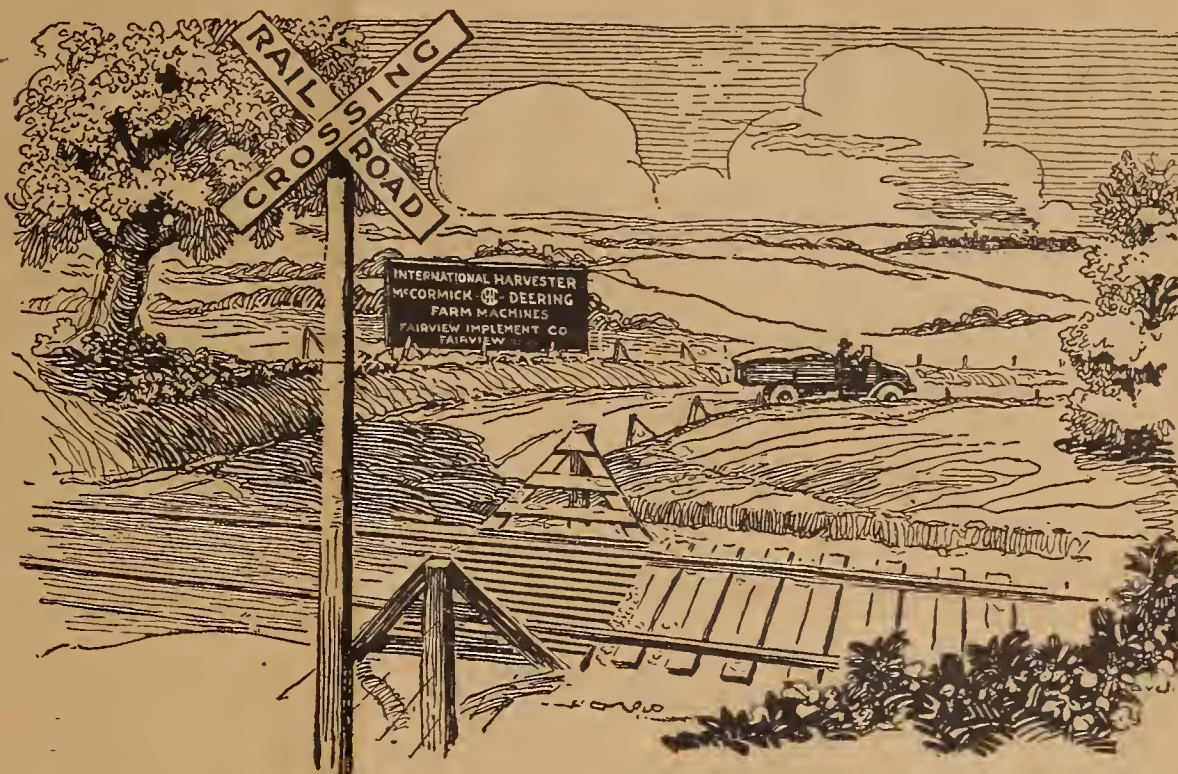
To the man who is determined to become a motorist, and who is not limited in his finances, an analysis of the new and used car problem emphasizes the wisdom of the experienced owner's advice: "Buy a new automobile."

Farm Boy Earns \$5,000

WHAT if you received a check for \$922.58 as the result of one week's work? Don't you think you would say that you were doing big business. That is what happened to H. B. Whitehouse, a club member of Buckley, Pierce County, Washington, last year. He sold raspberries and loganberries from his place amounting to \$5,018.73. It cost him \$1,263.94 to handle the patch, and it is interesting to note how some of the money was paid out. For instance, he paid \$17.45 for potatoes, wood, and transportation for the pickers. Another item was \$40 paid to a man for bossing the crate house.

Not to be outclassed by the big corporations in handling his help, it cost him \$13.70 for a picnic for them.

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J. B. FINLEY, Oran, Mo.

Early Sheep-Shearing Best

I HAVE practiced shearing sheep early for a number of years, and I believe it the best plan. I figure that I cannot afford to cause the flock a month or six weeks discomfort for the sake of an ounce or two of wool or an extra one-eighth inch in the length of the fleece.

My experience has been that early-shorn sheep are no more subject to cold than if the wool is on. The reason for spring colds is usually exposure to cold rains, and sheep should be kept out of such rains, whether shorn or not. I always shear my own sheep. Not being able to get the work done when I wanted it, caused me to undertake the job, and now I do not depend on someone else doing it for me. I shear whenever the weather becomes warm enough to cause the sheep discomfort.

To shear, I set the sheep up on its rump on a clean platform or floor. I begin at the head, splitting the wool down the throat, breast, and belly. I shear the entire head and neck first, with the sheep resting against me. In this way, if the sheep does not kick too much, the wool comes off in one unbroken fleece. At no time during the operation must the sheep get its feet on the floor. If it does, trouble is sure to start. As long as all four feet are off the floor the sheep will make no effort to get away.

To tie the wool I use the old wool board, as it leaves the fleece in better shape than tying by hand. In the absence of this I use a half bushel and, with very large fleeces, a bushel measure. I place three strings of wool twine across this measure. Working the fleece into a little ball, flesh side out, I start it into the measure with the back of the fleece down.

When it is in the measure the belly will be well worked in toward the center. The twine is then worked up and tied on top, and when taken out the fleece will be in a neat, compact bundle, flesh side out, and the work will be almost as well done as by the use of the wool boards.

When I do not wish to sell the wool as soon as shorn, I select a large box, as free from holes and cracks as possible, large enough to hold the wool. I line the box with one or more blankets, and start packing the wool in the bottom as tightly as possible. When the wool is all in, I place another blanket over the top and put on a lid tightly.

This box should be placed on blocks at least a foot off the floor, to lessen the chances of mice working into it. When handled in this way wool will stay in prime condition a long time, and I have never had any loss from shrinkage. I have weighed the wool when put into storage, and again when it came out several weeks later, and when well packed it has never lost weight.
M. N. H., Kansas.

When You Dock Lambs

WHEN docking lambs I hold the four feet together, and tightly against my body. There are two methods of docking—one is by cutting off with a sharp knife, and the other is by burning with a hot iron. The latter is preferable, especially if the lamb has a large tail. The hot iron sears over the wound and prevents bleeding. If the lambs are old, it is well to tie a string around the stump to help stop the flow of blood.
FRED J. HOOPER, JR.

Starting Poult Right

I HAVE found that fresh milk helps to keep down digestive disorders in young turkeys for the first three weeks. After that it pays to keep sour milk before them at all times. Toasted bread and milk is a good starting feed. The poult are seed eaters, and sloppy cornmeal mash sometimes cause serious losses.

After the first few days I feed cracked wheat and corn, and a little fine dry oatmeal. The poult must not be stuffed, but fed frequently on light rations, which is the way they eat when following the turkey mother on the range. Green food is essential in their diet. Fine grit and fresh water must be available at all times. Sanitation is very important, and it pays to scald the feed dishes frequently. The turkey is naturally a wild bird, used to a wide range. When raised on the farm every effort must be made to keep the food dishes and the roosting places clean and free from pests.
R. G. KIRBY, Michigan.

This little pig went to market; this little pig got hog cholera. Inoculation would have saved him.

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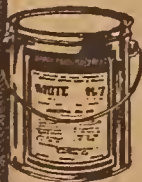
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Boyhood on a Middle-West Farm

[CONTINUED FROM PAGE 40]

any of it had been eaten. Certain it is, no dead wolf was found. I suppose the man scent attached to the footprints and to the handling of the bait was too strong, and their instinct (?) told them to let these pieces of meat alone. Fear and caution seems to overcome their hunger.

The coyote is called a coward and a sneak. He may be a coward, and he is a sneak, but he is no fool. I never saw one with his tail up. He always travels with his tail down, as if he recognizes his characteristics. Without a gun, or with a wagon and team, you may get within long rifle range of one; but, if you do, it is no use to wish you had a gun, for if you had you would not have been in range.

After a couple of years on the farm on Middle River we moved to the county seat, which was then the little town of Fontanelle, some twelve or fifteen miles to the southwest, and across a high rolling prairie, without a house or a farm on the way. Father and I had been back to the farm for a load of something which had been left there and night had come before we could get back home. There was snow on the ground and the moon was shining brightly. Looking back we saw a coyote following us, a hundred yards, perhaps, back. Father stopped the team to see what the coyote would do. It stopped also. When we moved on it did likewise. It followed us or more than a mile.

FATHER and a neighbor were riding over the prairie one day when a coyote ran out of a clump of grass and low shrubs nearby but did not go far. On examining her hiding place they found five or six cubs, a few weeks old. They disposed of all but one, which Father brought home, thinking it might please us boys. We fixed a box nest for it, and staked it out in the yard, secured by a small chain. We fed it milk and table scraps, which at first it would not touch as we stood by, but would eat when we went away. It thrived rapidly, and by and by became quite tame, apparently, but was not wholly to be trusted to refrain from napping at us. As it grew older the wolf unning developed. When Mother's young chickens came in sight it would lie down by its stake, figuring, it seemed, on having the length of its chain for a spring when a chicken had come within reach. Lying down it would appear to be asleep, but it must have had at least one eye open. A few of its successes in chicken-grabbing and growing tendency to snappiness, sealed

its doom, and it was taken away and killed.

While the prairies were bleak and cold in winter, they were beautiful in summer. Many of the wild flowers in great profusion grew there. In point of numbers and beauty the pink was pre-eminent, though the wild rose, with its large single flower, sometimes white, but usually pinkish in color, and yellow stamens, was a beautiful thing. There were many other kinds, even some weeds, I might call them, that had beautiful flowers. Standing on a knoll in the summer-time and gazing over the landscape, a sight was presented that was very attractive. I was only a boy, and not botanist enough to know all the beautiful things that grew on the prairie, but not knowing the names of things did not make me admire them the less. I did know the rosin weed, a tall-growing plant, with large, rough leaves, that exuded a gummy substance which the children gathered and chewed.

WE DEPENDED for our winter's supply of hay for our stock altogether upon the prairie. The best grass for hay usually grew along the slopes of the hills or rising ground, not on the top of the higher ground, nor on the low land, though sometimes a very good hay was found just at the edge of the low places. Usually in the swales and along the creeks the grass grew too tall and rank, with stems as large as lead pencils. I have seen acres covered with such grass, tall enough to hide a man on horseback, and so dense you could not walk or ride through it. In the fall of the year, when this grass was dry, a fire in it would make a roaring like a thunderstorm coming on.

I saw many prairie fires in those days, and they were something to be feared on a windy day. In the late fall or early in the spring, after the snow was gone and the grass had dried off, fires could be seen in some direction almost every night. Farms and farm premises were usually protected by a fire guard, made by plowing several parallel furrows some distance apart and burning out the grass between.

I never saw any more damage done by these fires than the burning of fences, but many settlers have lost hay and grain stacks and houses and barns by these fires.

Notwithstanding their threatening character, it is a grand sight to see these fires at night, slowly creeping over the brown prairies in long lines like an army in battle order. But they are something to be afraid of when, fanned by a strong wind, they

[CONTINUED ON PAGE 60]

Bay Port Folks as I Know Them

[CONTINUED FROM PAGE 50]

and accomplishments, all the bitter and sweet that are mingled in its course? You who profess to find no charm in the commonest ways of men and women, state no more than your own blindness. Scarcely a day goes by, here in Bay Port, that does not bring some keen new interest. "Someone is always doing something surprising. And when they do not we have the unending variety of human nature, as it exists in our plain folks, to study and marvel about. So, my friend, there are no ordinary people anywhere. They only seem so because we do not see and understand.

One of Uncle Dave's odd prophecies is that some day scientists will take a dead man's brain, and by some process reproduce from it, as from a phonograph record, all that is stored in its millions of cells. What a terrible revelation that would be! What pitiable dead hopes, what thwarted high dreams, what smothered dark temptations, what efforts failing of success by just a few steps, would be shown to the simplest lives.

HERE is old Sam Smalley, living alone in his little white cottage that stands on the corner of the orchard he planted a half-century ago. What sad, solemn pictures must pass before his tired old eyes as he gazes into his lonely fireplace through the dreary evenings!

Mrs. Smalley has been dead twenty years. They had a boy, a wild young vixen and their only living child, who ran away from home one day, with never a word to his parents afterward. It broke the gentle mother's heart, and bowed old Sam's shoulders as all his years of work had never

done. They had toiled and saved and planned for that boy, as only parental love knows how, and now there is no one for the fine farm to go to, except some distant relatives of Mrs. Smalley's. The old man is the last of his race, if the boy is not living, and the farm is something sacred to him, a treasure no stranger should touch.

I should not like to see the pictures that come and go in that bitter old mind, nor know its thoughts. He is a strong man, and when the passions of such are curdled they have a terrible intensity. The more sugar there is in cider the stronger vinegar it makes.

Is the boy still living? We wonder. In the mysterious balances of life, will the acid of that old man's grief find the hard young heart and soften it to homeward turning? Who knows? We all hope so.

With these and a thousand other questions and incidents, Bay Port grips the hearts of its people. It may seem just a dull little country place to those who pass through it and gaze out over our quiet fields and houses. They may wonder how we contrive to pass the time, but our chiefest concern is that we have not time enough. We do not need to invent interests in Bay Port, for we have work we like and folks we love. Monotony stands about as much chance of breaking into that combination as the former kaiser does of being elected president of the League of Nations.

NOTE: This is the first of a series of articles about Bay Port folks by Mr. Williamson. They are all real folks, men and women, and boys and girls, and children he has actually known in the little farming community of which he writes so lovingly and so understandingly.

THE EDITOR.

Penny Wise—Pound Foolish Separator Buying



Many buyers of cream separators are tempted to save \$10 or \$15 in first cost by buying some "cheaper" machine than a De Laval.

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Come With Me to the April Woods

APRIL brings back memories to me of school days when we would rush through the Saturday morning chores, put on our old corduroys, rubber boots or heavy shoes, sling a camera over shoulder, and start on a hike to the "Stone Farm." This was a narrow, heavily wooded valley full of native trees, shrubs and all the wild flowers that grow in central Ohio. It was a spot that had been preserved in its natural wild state, a rare thing in this fertile region. I suppose the owners were afraid that the steep hillsides would wash away if the protecting timber were removed. Anyway, it was a paradise for kids and lovers, and older folks too, who liked to look for the early hepaticas, bloodroot, and anemone. Others more practically inclined dug sassafras, to be used in making the aromatic tea that is good to drink, and which is supposed to "thin out your blood," made thick by too many winter pork chops.

I well remember the thrill we would get as we followed the creek, swollen usually from spring thaws, up the valley until we reached the cabin. Here had been an old sugar camp, and a fine cluster of sugar maples stood near-by. We had many romantic imaginings of robber bands, early settlers massacred by Indians, and various other people who might have lived in this cabin. And who knows but what they did? Cutting across a grassy hillside and deserting the creek for a time, we would swing under a water gap and into the Stone Farm proper. Sometimes we would see foxes' dens, usually we found wild flowers, which we sometimes dug up, carried home, and carefully set them out. One corner of the yard at Woodland Farm to-day is overrun with violets that have spread from my old wild-flower bed, and some of the trilliums, wild ginger, and jack-in-the-pulpits survive, although they have not multiplied as the more aggressive violets have.

There was an old mill race, and the ruins of a mill that were built by Mr. Stone, the first settler. I have often heard Father speak of visits with the old man, who was a very interesting character. Trees as big as your waist are growing on the banks of this mill race now, and it has long since been dry. Perhaps the ghost of old man Stone still goes back and forth from the ruins of his house on the hill to the mill, or along the race, looking for leaks caused by mischievous chipmunks. We would walk home across the fields, getting back in time to do the chores, and then, putting our tired legs under Mother's table, settle down to a real meal. Who will say that there is not romance and real fun in simple country pastimes?

A. S. W.

My Boyhood

[CONTINUED FROM PAGE 59]

threaten the premises of the farmer, if he has been careless enough to put off protection, and has to get out and fight the flames with wet blankets or old clothing, anything with which he can whip them out. Back-firing is usually the most successful way when there is time to resort to it.

Prices were high and money scarce in those days. I knew that in a general way. How little do the youngsters of a family know the stress and anxiety their parents labor under to provide for the family needs? Our family was not large, but since I have been a family provider myself I have often wondered how my father was able to provide food and clothing for us, knowing as I do now that he was a poor man. And yet our table always had enough three times a day, and our clothing, while plain, was sufficient for all weather.

But for all this my parents may have suffered anxiety. While the farm was made to supply much of our needs, there are many things a farm does not supply. There were no twenty-dollar hogs in those days to bring in money, and only enough pork and bacon for the family were raised. Sugar, tea and coffee, spices, salt and pepper, nails and other hardware, utensils, farm implements, etc., had to be bought. Sorghum from the farm supplied a portion of the sweets, and tea at three dollars the pound was made to go farther by adulteration with the leaves of the wild-tea shrub. This was a low, dense shrub that grew plentifully on the prairies, with a leaf like the tea leaf. The name was probably local, and not botanical.

Corn and wheat were very high, but the price did not bother us much, for Father usually raised sufficient for our needs.

[TO BE CONCLUDED]

There's a Way to Make Alfalfa Feel at Home

[CONTINUED FROM PAGE 7]

are broken by the heaving of the ground.

The variegated alfalfas have more of a branching root system, and are not so easily injured in this way. There is not sufficient seed of these varieties to supply the demand at present, consequently much common alfalfa is still sown in the North. Peruvian alfalfa is a valuable variety for California, Arizona, and some of the Gulf States, but is not hardy farther north.

When alfalfa is sown alone, the best implement to use is a special disk drill made to seed clover and alfalfa.

The seed should then be covered with a weeder or a spike-toothed harrow, with the teeth slanted back so as to cover the seed to a depth of one half to three fourths of an inch. When seeding with a nurse crop, the best plan is to seed both nurse crop and alfalfa with a drill, putting the alfalfa into the grass-seeder attachment, and dropping it ahead of the drill hose. If the grain drill used in seeding the nurse crop does not have a grass-seeder attachment, the nurse crop should be sown and the alfalfa seeded right after it with an alfalfa drill, or broadcast and covered with a harrow.

The rate of seeding will vary from 8 to 30 pounds an acre. Under average conditions from 10 to 20 pounds is sufficient in the western and central part of the United States, but along the Atlantic Coast and in New England 20 to 30 pounds is more satisfactory.

Young alfalfa should be allowed to grow without cutting as long as it grows well and does not bloom. If the crop turns yellow, or if there is danger of weeds smothering the young plants, it should be cut. Whenever the cut material is not too heavy, it should be left on the ground to act as a mulch. Alfalfa sown in the summer should not be cut the first season.

AFTER alfalfa is established, the best general rule is to cut the crop for hay when it is well in bloom. The feeding value is probably highest when about one-tenth of the flowers are in bloom, but it is usually best to allow the crop to become somewhat more mature before harvesting, in order that the plants may have an opportunity to store up plant food in the roots for the next crop.

It is not always safe to depend wholly upon the appearance of blossoms to determine the time of cutting the first crop. Blossoming is often delayed in the spring. The time of cutting the first crop can be determined by the basal shoots. Cut after the basal shoots are well started. The later cuttings will not be greatly delayed if the basal shoots become so tall that they are cut off with the mower. Others start quickly. There is more danger of cutting alfalfa too early than of delaying too long. A growth of several inches should be left on the field to serve as a protection to the plants over winter.

Alfalfa requires large quantities of plant food. A four-ton crop of alfalfa will use three times as much phosphorus, five times as much potassium, and thirty-five times as much calcium as a 20-bushel crop of wheat. Its deep rooting habit enables it to secure more of these elements of plant food from the soil than wheat, but for the best growth of alfalfa there must be liberal supplies of plant food in the surface soil.

If the soil is not fertile, barnyard manure or commercial fertilizer must be applied. Alfalfa will supply itself with nitrogen from the air, but phosphorus and mineral elements of plant food must come from the soil.

Every alfalfa field should, therefore, be started with a liberal supply of barnyard manure. The manure should be applied to the crop grown before alfalfa is seeded, in order that any weed seed in the manure may germinate and the young weeds be killed before the alfalfa is sown.

In the eastern part of the United States it will pay to reinforce the manure with acid phosphate, using from 25 to 35 pounds of acid phosphate with each ton of manure. When manure is not available, there should be applied, at the time of seeding, 200 to 300 pounds of acid phosphate to the acre.

Old stands of alfalfa can be greatly benefited by an occasional top-dressing of phosphated barnyard manure which is free of weed seed. The manure should be applied during the fall or winter. A spreader should be used. When manure is not available, 200 to 300 pounds of acid phosphate should be applied annually in the early spring to alfalfa fields in the eastern part of the country. It will also pay to use potash on many soils.



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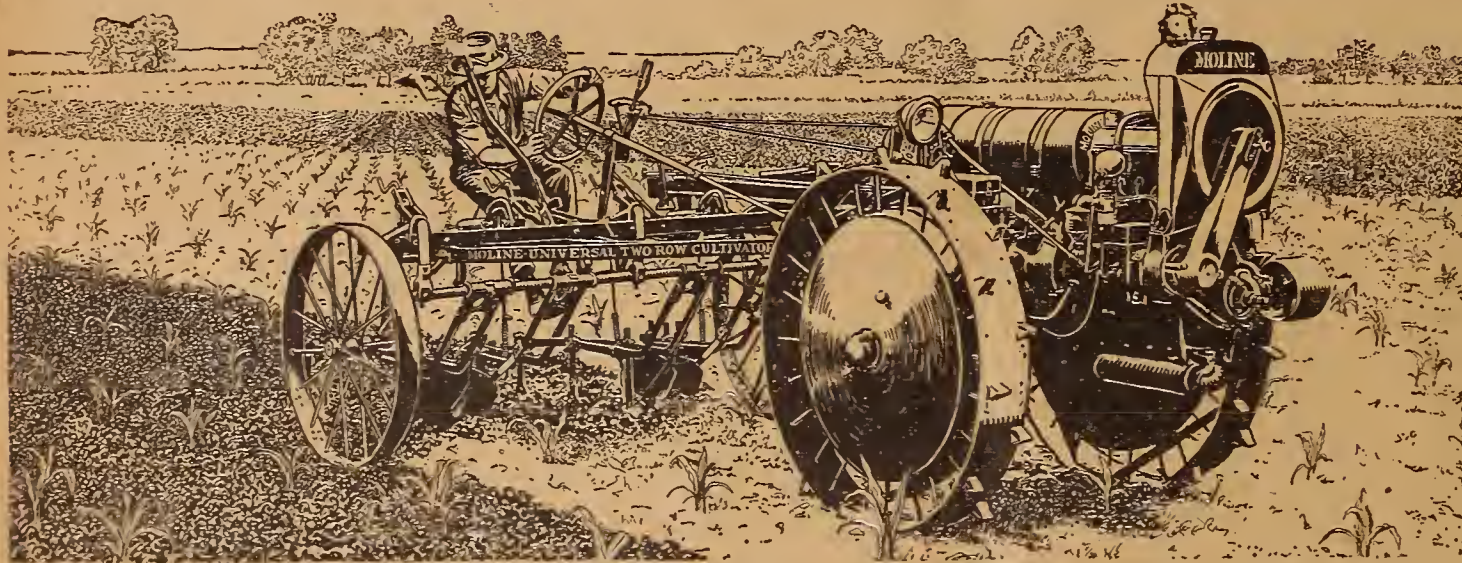
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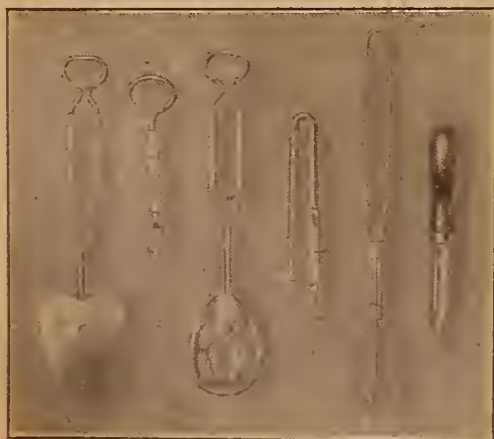
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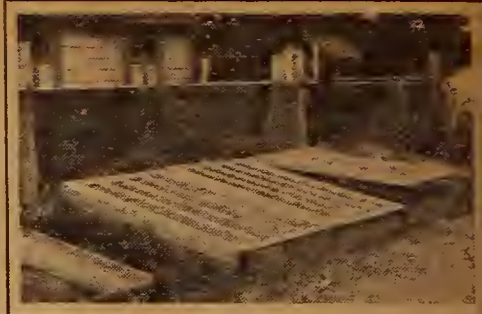
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A type of cold-frame used with much success

My Cold-Frame Makes Me Money

By James Simpson of New York

FOR five years now I have used a cold frame, and have found it very helpful in starting my home garden, and for my tomatoes. I grow about two acres of the latter for the local market.

I started with a rough board frame, and some big storm sash which I had bought at an auction. Even this crude outfit was so helpful that after two years I bought half a dozen regular cold-frame sash. I feel satisfied that they have made a difference of a good many dollars every season in the crops I grow.

I like to have my frames ready to use as early as possible in the spring. For this reason, I bank the frames with manure late in the fall, whether there is anything in them or not. Then I fill the insides with leaves and dry manure, and put some old boards over these. The result is that the soil freezes very little, if at all. The leaves and manure are removed the first part of March, as soon as the sun begins to get strong and the coldest freezing weather is over. The sash, which I go over during the winter to put in broken lights and to paint, are then put on, so as to get the soil warmed up. I have some mats, made out of three thicknesses of burlap bags, which are thrown over the sash on very cold nights. As a result, the ground inside the frame is ready for planting the latter part of March, which, in our section, is about three weeks before we can plant outside.

AS SOON as the ground inside the frames can be worked, I plant onion sets, radishes, and kohlrabi, in rows 12 inches apart. If very cold weather comes, the soil may freeze a little on top, even through the burlap mats, but not enough to hurt. Between the rows I sow carrots and, about a week later, set out well-hardened young beets, which I have started for me by a market gardener near town. This leaves the rows only six inches apart, but the onion sets, radishes, and kohlrabi are pulled just as soon as they are big enough to use, which leaves plenty of room for the beets and carrots.

Lettuce plants, which have been started inside, are set out as soon as danger of very hard freezing is past. The temperature inside the frame may drop down to even two or three degrees below freezing, without injury. If by any chance any of the things growing inside the frame actually freeze on a cold night, I water them first thing in the morning with very cold water, and keep the sash covered in the morning until after they have thawed out again. As all the plants mentioned above are comparatively hardy, a slight freeze will not injure them.

It is important to have varieties suited to frame growing. I use May King and Simpson lettuce, Crimson Globe radish, Nantes carrots, and Crosby's Early Egyptian beet. It's very important, too, to get thoroughly reliable seed. I've planted radishes that gave at least a dozen different shapes and colors from the same package.

In addition to the vegetables, which remain in the frames until ready for use, I start other things for transplanting outdoors later. These include cabbage, cauliflower, lettuce, and celery. I have two boxes or flats of each of these started for me the latter part of February. Then they are big enough to transplant to my cold-frame the end of March. I can give them plenty of room—about 3½ inches each way, so that they make strong, rugged plants to transfer to the open about three weeks later. They grow rapidly in the rich soil, made up largely of very old rotted manure, which I provide them.

When taking out the lettuce plants, every second plant in every second row is left to grow where it is. These come or just after the lettuce that was set in the frames before, and one to two weeks ahead.

of the outside crop. They often bring the same price, sometimes over \$1 a dozen.

I plant to get as much of the frame space as possible emptied out by the end of April. The beets, carrots, and other things still growing there, of course, no longer need the glass over them by this time. So these same sash are used a second time, over tomato plants. These I have grown for me, and they have been once transplanted, to flats, before I get them. So they are nice, stocky little plants, three to four inches high, that haven't begun to crowd yet. I put them four to five inches apart each way, so they don't run up tall, but have plenty of room to grow short and stocky. As I grow for the early market, I plant mostly Bonnie Best. Many of the plants have the first clusters of fruit set when I put them in the field.

I think attention to temperatures, so that the plants have plenty of fresh air at all times, except during real cold weather, is the most important thing to remember in handling cold-frames. It is remarkable how quick the temperature under the glass will run up on a bright sunny morning. Careful watch must be kept so as to lift the sash a little when the thermometer in the frame gets up to 60° or 70°. On days that are warm enough I always take the glass off altogether. This makes some extra work, but makes the best plants.

Watering, too, must be watched just as carefully. I have a pipe run from the barn out to the cold-frames. I formerly used a hose, but last year got a little automatic sprinkling line that does the job without any time wasted holding hose, and does it better. From the middle of April on, when the days are sunny and the plants growing rapidly, it is remarkable how much water they will drink up.

Although I'm not a market gardener, I would not go without my cold-frames for a good deal. They bring in a good many extra dollars when there's little coming in from the farm, they help a lot with my own table, and they mean a lot more money from my tomato crop.

Here's an Easy Way to Clear Your Fields

ON THE Archibald Livingston farm near Hopkinton, Iowa, there was a tract of pasture land 25 acres in extent that had practically been taken by thorn apples. For some reason the former owner had neglected to trim them out, and they grew bigger and bushier every year. During the winter of 1918-19 the manager of the farm, Dr. H. Livingston, decided to have the trees grubbed and the ground made ready for corn. Immediately he was assailed from every quarter with offers from men who wished to do the work.

The thorn apple, it should be explained to those unacquainted with it, is a bushy, rooty shrub about the size of a plum tree. There is frequently a main trunk with a dozen sprout trunks nearly as large. The roots lie near the surface, and are very strong. Sharp thorns make working around the tree an unpleasant task.

Many of the offers involved a cost that would take all the profits for several years. One man wanted \$1 per tree, and as there were about 1,000 trees the expense of clearing the land on this basis would be no small item.

From among these applicants Dr. Livingston chose C. R. Gearhart, whose unique way of doing the work may carry a suggestion to some of you who intend to grub thorn apples or similar small shrubbery. Gearhart's price for doing the work was \$200, and the task was accomplished in a little more than one week, making the venture a profitable one. The expense was almost negligible.

Gearhart owns a good strong team. He provided himself with a strong rope, 60 feet long, and several sharp axes. He employed two men. His practice was to pass the rope a time or two around a tree near the top. The men stood ready with axes. The horses were hitched 30 or 40 feet away, and were caused to pull slowly and steadily. As the pressure came on the roots opposite the team, the men cut them with their axes. In a moment the tree would be flat, and a little more vigorous work with the axes would loosen the last of the roots. Many of the trees were pulled in less than five minutes.

Gearhart attributes a part of his success to the fact that the soil was quite sandy. More important, he thinks, is the fact that the work was done in early spring when the soil was very soft, so that the roots pulled up easily.

E. V. LAUGHLIN, Iowa.



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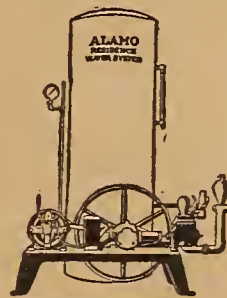
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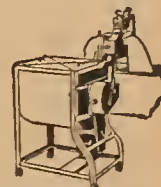
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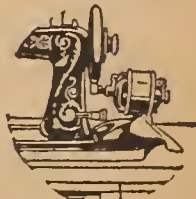
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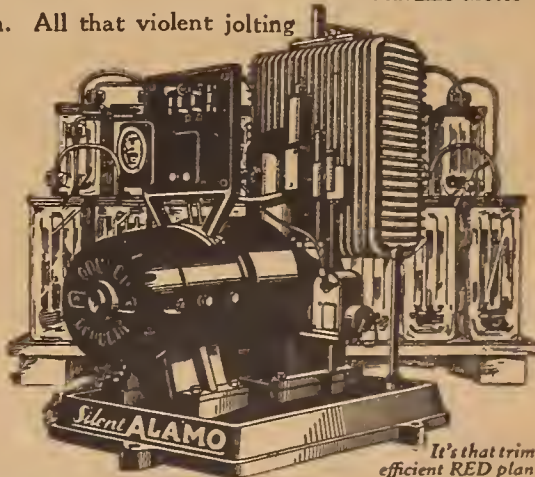
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A Personal Note to You from David Blair

Dear Friend:

There is an old saying among salesmen that reads something like this: "Give a man his money's worth, and he'll buy from you again." We try to adhere to it. Have you noticed how much bigger and better FARM and FIRESIDE has been getting lately? This issue, for example? More than 750,000 people are reading it. On account of the shortage of paper, it is becoming increasingly difficult to take care of everybody.

An expiration coin-card in this issue means that your subscription has expired. Be on the safe side. Renew it today and be sure to get the May issue. Address your renewal to me. I'll take care of it personally for you.

David Blair
Manager, Subscription Bureau

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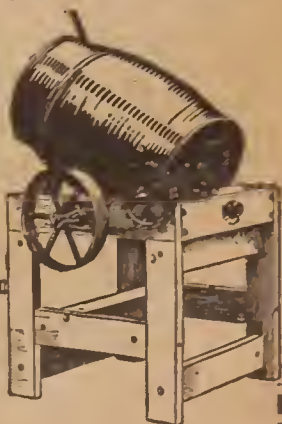
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Our Letters to Each Other

This is where we take a few lines every month to talk things over, so if you've got anything on your mind, let's hear from you

LEO MEHLER, secretary-treasurer of Rose Cliff Fruit Farm, at Waynesboro, Virginia, writes us that a city man asked him recently what he would have to do to become a farmer.

Mr. Mehler's answer, which he put in the form of "Twenty-one things every farmer must know," and of which he sent us a copy, is so true and so conclusive that we thought you might like to have it on hand to answer, perhaps, the same question some day. So here it is:

"DEAR BILL: To be a good farmer a man:

"1. Must have good knowledge of soils.
"2. Must have knowledge of proper soil drainage.

"3. Must have knowledge of location and contour.

"4. Must have knowledge of soil in the way of physical condition—soil acidity, etc.

"5. Must have knowledge of crops in relation to soil and climate.

"6. Must have knowledge of crops in relation to each other (rotation).

"7. Must have knowledge of needs in the way of fertilizer, etc.

"8. Must have knowledge of the best way to handle the crops he grows.

"9. Must have knowledge of care, feeding and attention of livestock.

"10. Must have knowledge of livestock in relation to climate and type of land.

"11. Must have knowledge of manures, fertilizers, and their proper handling.

"12. Must be a good mechanic on general farm machinery.

"13. Must not only be a good mechanic but must be ingenious, so that temporary repairs can be made with baling wire, binder twine, pieces of wood, etc., till time is available for better repairs to be made.

"14. Must have good knowledge of gas engines, trucks, tractors, and automobiles—their uses, handling, and care.

"15. Must be a good carpenter.

"16. Should be a good blacksmith, plumber, and have some knowledge of electricity.

"17. Besides all this he must be a good buyer and a good salesman.

"18. He must be enough of a manager to lay out his crops—not only in relation to soil and climate, but also in relation to salability and the greatest possible financial return; that is, a crop not so eminently suited to his farm may pay better, due to local or peculiar conditions, than one that can be grown to perfection.

"19. Should be enough of a bookkeeper so that he can tell what his products are costing and he can change his methods, if they are costing too much.

"20. Also, he must have some executive ability, so that he can distribute labor and use machinery to the best advantage.

"21. In order to accomplish this, working in close personal contact with his help, he must have such a personality and manner that he will be popular with his men.

"Sometimes the forces of nature in the shape of a frost, drought, excessive wet season, cloud-burst, hail, or any one of a half dozen other causes, might make a whole year's work go to naught. A farmer must be man enough to start all over again without being defeated. LEO MEHLER."

Right You Are

Lately we've been getting a good many letters from that much maligned creature, the hired man; and some of the things they say about their bosses and their jobs are highly illuminating. None of them has been more so than the letter of F. E. Spear of Jamestown, Kansas, who has been both boss and hired man.

His theory is that the right boss has no trouble in keeping the right hired man, and that the right kind of hired man has no trouble in finding a good boss and, eventually, a farm of his own. He says:

"I have had many years' experience both as a farmhand and an employer of farmhands, both in Missouri and Kansas.

"A writer in FARM AND FIRESIDE says he spent one summer on a farm as a farmhand, and that the farmer went to church and the hand spent his time around the livery stable. My experience is that most

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You are invited to ask questions of any or all of these men in their respective fields. State your problem clearly and fully, enclosing a stamped self-addressed envelope for reply. Address each editor care of Farm and Fireside, 381 Fourth Avenue, New York.

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George D. Buckley, President; Lee W. Maxwell, Vice President and General Business Manager; Thomas H. Beck, Vice President; J. E. Miller, Vice President; A. D. Mayo, Secretary; Albert E. Winger, Treasurer

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farmers would prefer to have the farm help go to church. Of course, many farmers do not take any interest in church work, and therefore do not care what the hands do on Sunday, but church-going farmers wish to see the farm help go to church on Sunday.

"I have worked on a few farms where it was too far to walk to church and the farmer would not furnish any conveyance, but I did not stay long at such places. It is my experience that any young man can get a start in society in most places if he acts respectfully and dresses well.

"Again, any young man can save enough money to pass from the ranks of employed to employer. It is all bunk to say the average farmer holds himself above his hired help, if the hired help is his equal socially and mentally.

F. E. SPEAR.

She Cured Him

We will now recall to your mind the lady "Jessie M.," whose husband cursed so appallingly that she asked other readers of FARM AND FIRESIDE to suggest a cure. Out of some dozens of very able suggestions we chose the following, from Mrs. H. C. M., of Georgia:

"Treat your brutal husband as I did mine, Jessie M. I got him away from the children and in front of

strangers he was doing business with, and I used some pretty strong language myself.

Every little argument that came up I pointed with all the cuss words I ever heard him use. I admit I am ashamed of it, but it was the only way out. When he asked me why I did it, I said it seemed to be the fashion, and I had adopted it. He doesn't do it any more."

Good work, H. C. M.! I hope Jessie M. tries it out. Sometimes it works, and sometimes it doesn't. There was the case of Mark Twain. A great and wonderful cuss, Mark was; and shortly after his marriage he banged his thumb while hanging a picture in the library. He let loose a string of oaths that would knock your eye out.

Hearing someone at the door he turned, and there stood his bride. She looked sweetly up at him, and repeated after him exactly what he had said. Then she said it again. Mark smiled down at her a moment and drawled: "Ah, my dear, you know the words, but you don't know the tune."

Still, I dare say, the experience did him some good.

Hurrah for Edward

From Mrs. A. E. Riffle of Mt. Lake, Minnesota, comes this letter:

"Enclosed please find my son's picture—Edward Read Riffle. He outspelled all



This is Edward Riffle, champion speller of Cottonwood County, Minnesota, whose mother was so proud of his accomplishment she sent us his picture

the districts at the county spelling contest, both orally and written.

"He got a free trip to the state fair in St. Paul. They could not spell him down.

"Some predict he'll be one of the future Presidents of the U. S. A.

"Edward is a farm boy in District No. 12, Cottonwood County. His sister Almira won the same contest two years before he did. They both got a fine gold pin from the county. MRS. A. E. RIFFLE,

"Mount Lake, Minnesota."

That certainly is fine for Edward, Mrs. Riffle. And maybe he will be President some day. President Grant was a day laborer in St. Louis, Abe Lincoln was a rail splitter, Woodrow Wilson was once a poor young lawyer in Atlanta. But let Edward not forget that Presidents must be able to do more than spell. If he will go on, work hard, and do everything as well as he does his spelling, he will certainly amount to a great deal in the world, even if he doesn't become President.

Please Forgive Us

If your magazine is late this month please don't hold it against us. The "flu" hit us an awful jolt at Springfield right in the midst of the early spring issues. Fully one third of all the 1,500 people in the Crowell plant were ill for periods of time ranging from a few days to two weeks each.

The great increase in the number of pages in each of the three magazines, FARM AND FIRESIDE, "The American Magazine," and the "Woman's Home Companion," and also the large and rapidly increasing circulation of all three, had kept the plant working at top speed night and day to keep up, even before the "flu" came.

You can readily see that anything that breaks into a top-speed organization that way means a serious setback.

Equipment and people and new buildings are being added as rapidly as possible to catch up with Crowell growth, but we seem to outgrow improvements and additions about as fast as we can make them.

So please remember, if your magazine is late, that we are getting it to you just as fast as we possibly can.

How much time and money is lost in this country through illness every year? Well, statistics show that, on the average, every American is on the sick list for nine days in the year—making a total, for the one hundred and ten million people of the United States, of over two million seven hundred thousand years of illness in this country every twelve months.

Industrially, two million seven hundred thousand years of human life annually go to waste; and, moreover, the sufferers demand a vast amount of time and of effort from those who are well. The invalid, singly, may seem insignificant; in mass, his totals indicate an enormous cost, a pitiful waste, a mighty problem.

Estimating the loss of wages at an average of a dollar a day to every invalid, it would amount to more than nine hundred and ninety million dollars a year. The cost of treatment may easily amount to as much. Thus, sickness costs the United States something like one billion nine hundred and eighty million dollars annually, a sum near the combined value of the product of our two greatest manufacturing industries—those of iron and steel and of textiles, according to the census of 1915.

In closing this time we just want to thank the farm mothers who read FARM AND FIRESIDE for their interest in the Better Babies service of the magazine. Ever since we announced this service last May we have averaged nearly five letters a day from farm mothers subscribing for it.

In this connection we will simply drop the hint to farm mothers, and fathers too, that before this year is done FARM AND FIRESIDE will announce another service that we think will help you a great deal with your problems of taking right care of your growing youngsters.

Good-by until next month.

George Martin

World-Famous Highways

WRITING to ask what he could do about it, W. H. B. of southern Missouri said that the road past his farm is "the worst in the world."

That is an unenviable distinction for his road to have, and maybe he'll do something to change it, but it brings up the question of other interesting highways. If his is "the worst," which is the best, the longest, the highest, the shortest, etc? Here are a few of them:

The highest in the world is Main Street, in Denver; the richest is Fifth Avenue, in New York City; the widest is Market Street, in Philadelphia; and the shortest is the Rue Blé, in Paris.

The dirtiest is that of Tchangsti, in Nankin; the cleanest is the Via Castile, in Seville, Spain; the most aristocratic one is Grosvenor Place, in London; the most beautiful is the Avenue des Champs Elysées, Paris. The narrowest street is the Via Sol, Havana, Cuba, which has a width of only forty-two inches; and the oldest is the Appian Way, built by Julius Caesar in the days of the Romans, and still in use and good repair.

C. E. S.



Radiator Cement

In liquid form and easy to use. Will ordinarily seal leaks in from two to ten minutes.



Hastee Patch

A quick permanent, inexpensive repair for tubes and casings. Can be applied in three minutes at a cost of 2 cents.



Valve Grinding Compound

Will remove pits and foreign substances from valves, giving a velvet seat. Will not cut grooves.



Carbon Remover

An occasional dose will stop that knock—quiet the motor—and save the batteries. You can do it yourself in ten minutes.

Keep Your Car Young

IT isn't fair to yourself or your car to run it without any attention and then sell it at a big loss. With but little effort you, yourself, can keep your car in such condition that the depreciation will be very slight. We offer for your use Johnson's Car Savers. No experience is necessary for their use. They can be applied by the amateur with perfect satisfaction.

Start today to reduce the depreciation of your automobile. An hour or two every month and Johnson's Car Savers will prove their value in dollars and cents when you come to sell or turn in your car.

**JOHNSON'S
Car Savers**

Johnson's Car Savers are of the very highest quality that can be produced. You will find cheap makeshifts on the market, but when you insist upon Johnson's you are taking no chance, for all of our preparations are fully guaranteed.

There's a Johnson Car Saver for Every Purpose

Representative dealers and jobbers all over the world handle Johnson's Car Savers. Don't accept or handle unknown substitutes. Write for our booklet "Keep Your Car Young"—it's free.

S. C. JOHNSON
& SON
Dept. FF-4

Racine, Wisconsin
U. S. A.



Cleaner and Body Polish

Johnson's Cleaner and Johnson's Prepared Wax will enable you to make the body, hood and fenders of your car look like new. Easy to use.



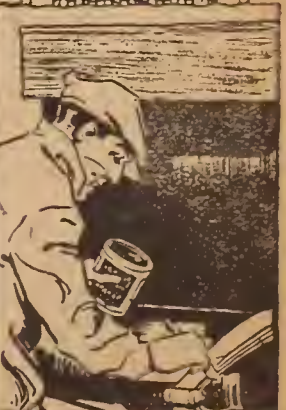
Top Dressing

Johnson's Black-Lac is the ideal top dressing. One coat imparts a rich, black surface just like new.



Auto-Lak

A splendid elastic varnish for bodies, hoods and fenders. A coat will increase the value of your car from 10% to 35%. Dries in 24 hours.



Stop Squeak Oil

It seeps between the springs, thoroughly lubricating them. Makes your car ride easier, reduces the liability of spring breakage.



Copyright 1920, by The Goodyear Tire & Rubber Co.

"I haul on pneumatics and deliver fruit unbruised—direct from tree to town—no reloading from orchard teams. Others here have ruined thousands of dollars' worth of fruit by jolting it on solid truck tires. A truck contractor has used two sets of solid tires since I began hauling on my Goodyear Cord Tires."—F. A. Tufts, Lone Pine Ranch, R. F. D. 31, Loomis, Cal.

IN much the same way as that described above farmers everywhere have demonstrated how thoroughly pneumatic tires equip motor trucks for all farm hauling.

By affording traction, cushioning and quickness that solid tires cannot supply, Goodyear Cord Tires on trucks help users forget crop-moving difficulties hitherto requiring extra labor and expense.

The able Goodyear Cord Tires do away with needless transfers of loads from teams to trucks, protect crops in transit and enable marketing with a promptness that catches prices at their highest.

Their unflinching behavior in grinding toil

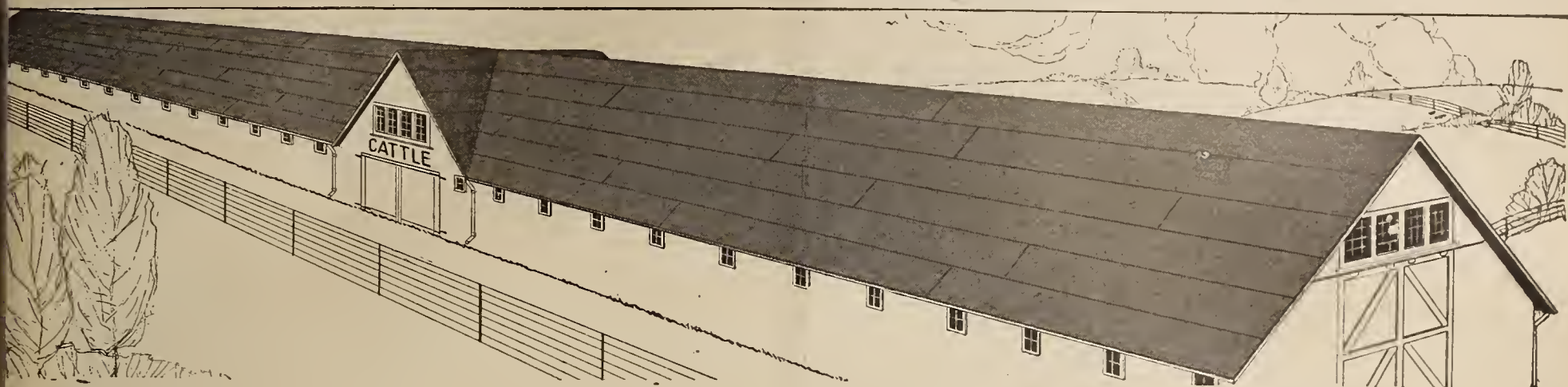
shows that all the valuable advantages of the pneumatic tire have been made entirely practical for truck duty through the development of Goodyear Cord construction.

This construction furnishes the sinews of a tremendous ruggedness and thus fits the big pneumatics to deliver mileages frequently rivaling those of powerful solid tires.

Farmers' reports, describing in full the effect of pneumatic truck tires in eliminating farm drudgery, assisting general motorization and increasing yearly income, can be obtained by writing to The Goodyear Tire & Rubber Company, at Akron, Ohio.

GOODYEAR
CORD TIRES

The area of roofs covered yearly with Certain-teed is greater than that covered by any other kind of prepared roofing. Certain-teed comes in rolls—both in the staple gray kind and the mineral-surfaced green or red, and also in green or red mineral-surfaced shingles for residences. Light, medium and heavy Certain-teed Roofings are guaranteed for five, ten or fifteen years respectively. The mineral-surfaced Certain-teed is guaranteed for ten years.



CERTAINTY OF QUALITY AND GUARANTEED SATISFACTION - CERTAIN-TEED

Buying Roofs by the Year

AFTER all, the only accurate way of figuring the cost of a roof is to divide its total cost by the number of years service that it gives.

With Certain-teed the total cost is low and the number of years is high.

A Certain-teed heavy-grade roof—the kind generally used on barns—is guaranteed for fifteen years and as a rule lasts considerably longer.

Yet the cost per square is much lower than that of less modern forms of roofing, and the cost of laying is also low, because even unskilled labor can put it down very quickly.

Dividing the total cost of Certain-teed by the number of years service shows a most moderate cost per year.

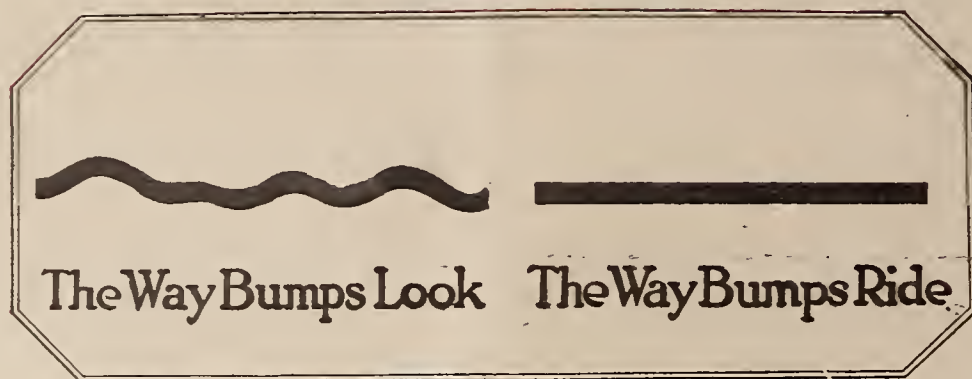
Those who have compared this cost per year with that which they have usually paid, find that Certain-teed represents a really amazing economy.

Certain-teed Products Corporation
General Offices Saint Louis
Offices and Warehouses in Principal Cities

Certain-teed



PAINT · VARNISH · ROOFING & RELATED · BUILDING · PRODUCTS



Wonderful Riding Qualities In Coast-to-Coast Trip

ON rough highways and desert trails, in sunshine and storm, the Overland 4 Four-Door Sedan blazed the trail for the U. S. Army Pioneer Motor Transport Train, from Washington to San Francisco. This plucky car was ever in the lead.

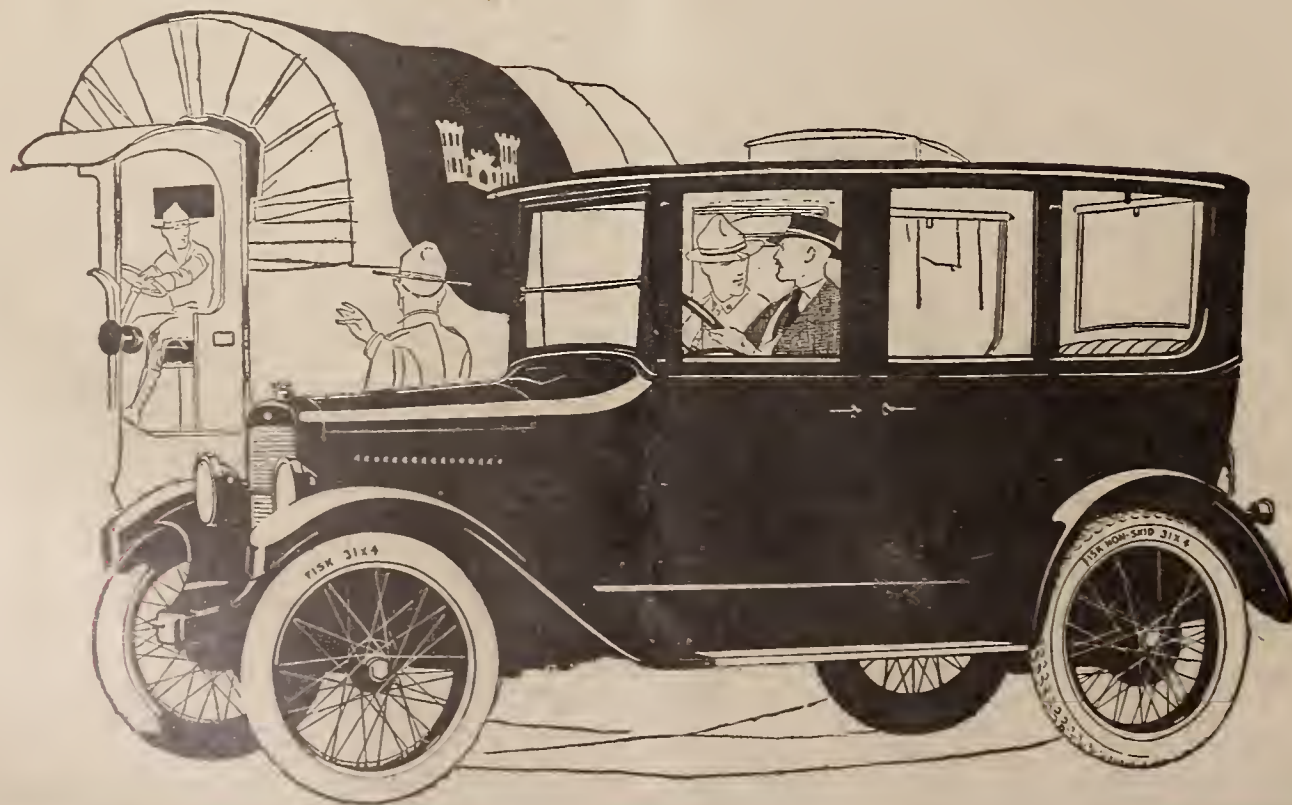
It was still another convincing demonstration of the wonderful riding ease of three-point suspension *Triplex* Springs and of this car's remarkable ability to hold the pace on any road.

Dr. Johnson, official lecturer for the Lincoln Highway Association, rode the entire distance from coast to coast in the Overland 4 Sedan. He pays this splendid tribute to its performance:

"I found the Overland 4 Sedan so suited to my needs that I rode in it from choice all the way. It must be the new spring arrangement, for even when the roads were rough I came to the night stops without fatigue. It is a marvel of ease and comfort."

WILLYS-OVERLAND, INC., TOLEDO, OHIO

Sedans, Coupes, Touring Cars and Roadsters



FARM & FIRESIDE

The National Farm Magazine

MAY 1920

5¢ A COPY



Let's Tell Them the Truth! — See page 5

Illustration shows Everlastic Slate-Surfaced Shingles in the red tone on barn, silo and residence and Everlastic "Rubber" Roofing on out-building.



**Barrett
Everlastic
Roofings**

A Western Farm Paper says—

"Sightly farm buildings create home pride in the owner and his family; keep him up-to-date, and strengthen his credit."

Barrett Everlastic Roofings fully meet the requirements of the farmer who realizes that the appearance of his place goes a long way towards fixing his standing in the community.

Barrett Everlastic Roofings are low in cost, easy to lay, weather-proof, fire-resistant and extremely serviceable.

Both forms of Everlastic Shingles and one of the Roll Roofings have a real crushed-slate surface in a natural art-shade of red or green which gives them rich and lasting beauty.

They will improve the appearance of the finest residence, yet are economical for steep-roofed farm buildings of every type that require an attractive roof.

And where a plain-surfaced roll roofing will do, Everlastic "Rubber" Roofing provides the utmost in economy and durability.

Illustrated booklet describing any one of the four styles of Everlastic Roofings will be sent free on request.

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Everlastic "Rubber" Roofing

A recognized standard among "rubber" roofings. Famous for its durability. Made of high-grade waterproofing materials, it defies wind and weather and insures dry, comfortable buildings under all weather conditions. Nails and cement with each roll.



Everlastic Slate-Surfaced Roofing

A high-grade roll roofing, surfaced with genuine crushed slate, in two natural shades, red or green. Needs no painting. Handsome enough for a home, economical enough for a barn or garage. Combines real protection against fire with beauty. Nails and cement with each roll.



Everlastic Multi-Shingles (4 Shingles in One)

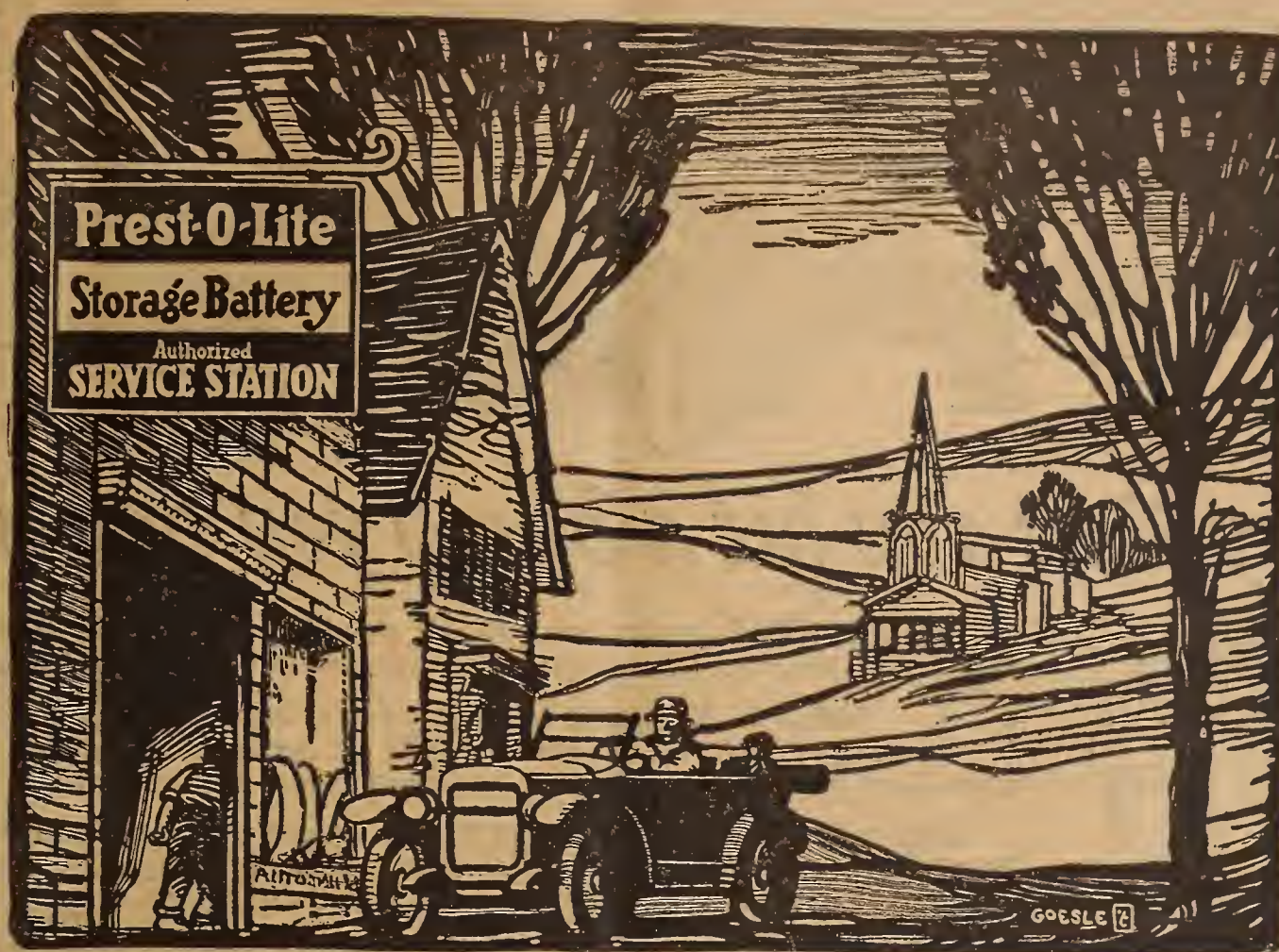


Made of high-grade thoroughly waterproofed felt and surfaced with crushed slate in beautiful natural slate colors, either red or green. Laid in strips of four shingles in one at far less cost in labor and time than for wooden shingles. Give you a roof of artistic beauty worthy of the finest buildings, and one that resists fire and weather. Need no painting.

Everlastic Tylike Shingles

Made of the same durable slate-surfaced (red or green) material as the Multi-Shingles, but cut into individual shingles, 8 x 12 3/4 inches. Laid like wooden shingles but cost less per year of service. Need no painting.





What this Sign Means to YOU

LOOK for this sign when you drive into town. It is a kindly invitation to drive up and unload all your battery worries on the broad shoulders of the local representatives of the pioneer service to motorists.

It means honest advice as to the actual condition of your battery, no matter who made it.

It means testing and distilled water as often as your battery needs it, at least twice monthly during the summer.

It means expert advice on the proper adjustment of your generator to your battery,

to prevent overcharging—an exclusive Prest-O-Lite Service Station feature.

It means reasonable prices when and if repairs or recharging may be necessary and continuous use of your car while battery repairs are being made; it means, conscientious work by a man trained to make battery repairs.

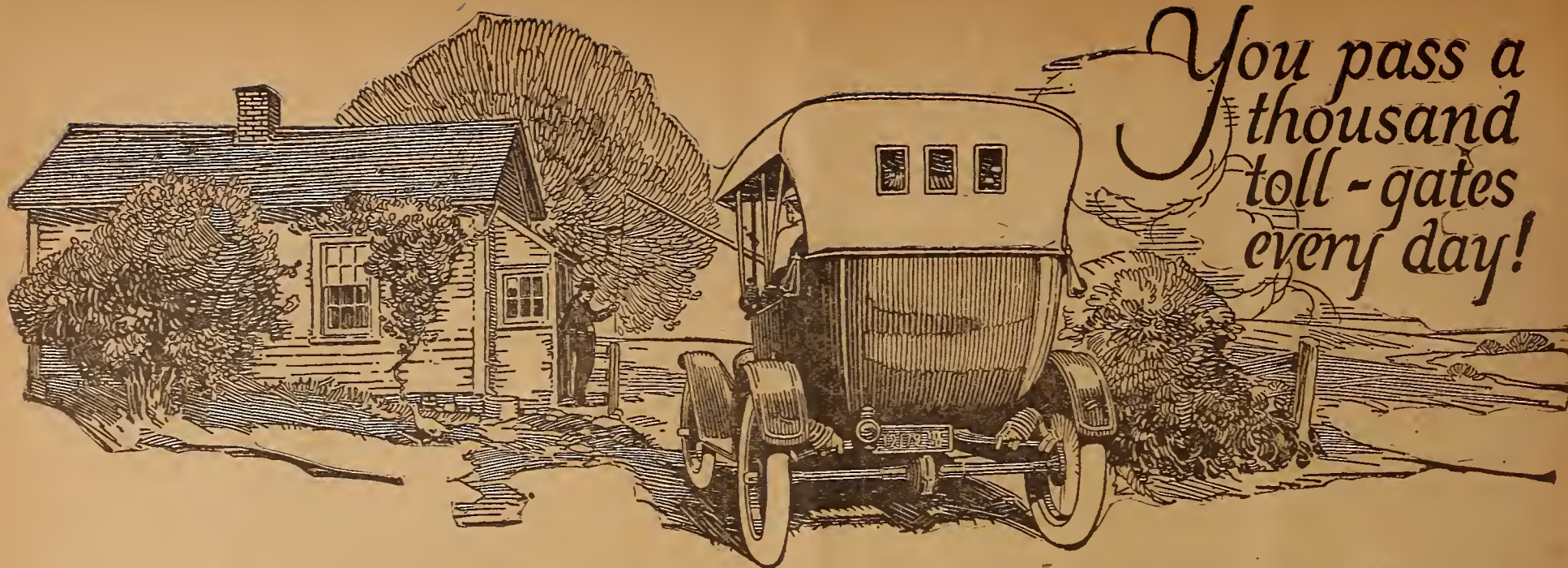
The Prest-O-Lite service man is a good man to know. There are more than 2500 of him throughout the United States and Canada.

He can prolong the life of your battery and save you expensive repair bills, if you'll let him. Better make his acquaintance NOW.

THE PREST-O-LITE COMPANY, Inc., General Offices: 30 East 42nd Street, New York, N. Y.

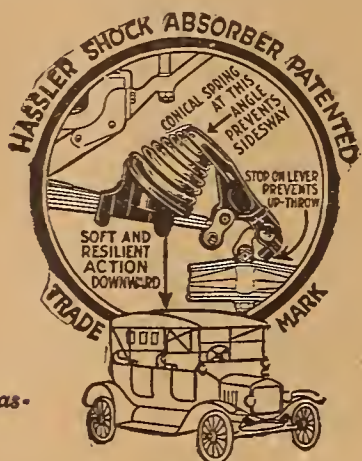
Eighth and Brannon Streets, San Francisco

In Canada—Prest-O-Lite Co. of Canada, Limited, Toronto

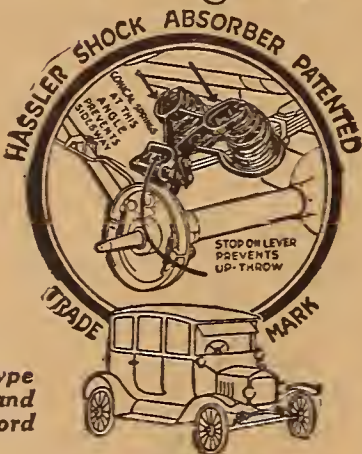


*You pass a
thousand
toll-gates
every day!*

Every time you hit a bump you pay a toll!



For Ford Pas-
senger Cars



This Twin Type
for Front and
Rear of Ford
Sedans



This Twin Type
for Front and
Rear of Ford
Commercial
Cars



This Twin Type
for Front and
Rear of Ford
One-Ton
Trucks

SOMETHING has had wear that it should not have had. Something probably has received a slight strain that will develop into trouble.

Add these thousands of little strains, bumps, shocks, and jars together and you have the reason why your car needs repairing, why your tires are worn down quickly, why your car wears out sooner than it should.

Hassler Shock Absorbers protect the car against the bumps and jolts that come from bumpy, rutty roads. They eliminate the need of paying tolls. They make your car capable of running over ordinary roads, without injury.

In fact, a million sets of Hasslers in use today prove that they save at least one-third of the ordinary repair and tire expense, and lengthen the life of the car by a third.

These are real advantages which you want. They speak to you in terms of dollars and cents. They make the most economical car more economical.

In addition, you have comfort, the same comfort that is enjoyed by owners of the highest priced cars. This is something you, too, will appreciate.

You can secure Hasslers for your touring car, roadster, coupe, sedan or truck. Your dealer will fit your car with the right type of Hasslers.

Furthermore, your dealer is authorized to give you a 10-Day Trial—during which time you use the Hasslers and if they do not prove entirely satisfactory he is to take them off and refund every cent of your money.

If you do not know your Hassler dealer, then write us and we'll see that your Hasslers are supplied promptly. Opportunities now for exclusive distributors in many foreign countries.

ROBERT H. HASSLER, Inc., 502 Naomi St., Indianapolis, Ind.

Made in Canada by Robert H. Hassler, Limited, Hamilton, Ontario

The Hassler Guarantee: "Absolute Satisfaction or Your Money Back".

A Standardized Quality Product—Worth the Price



TRADE MARK REGISTERED

Shock Absorbers

PATENTED

for Ford Cars and Trucks

The conical springs set at the angle shown prevent sidesway and allow for the most resilient downward action. The springs compress on either upward or downward movements—do not stretch out of shape—do not allow up-throw. Hasslers last as long as the Ford and make it last.

Let's Tell Them the Truth!

By S. L. Strivings of Castile, New York

President New York State Farm Bureau Federation and Vice President of the American Farm Bureau Federation

I RECEIVED a letter from the Editor of FARM AND FIRESIDE not long ago in which he said:

"We note that the New York State Federation of County Farm Bureau Associations has established the first state speakers' bureau which the National Farm Bureau Federation proposes to establish in every State, and that this speakers' bureau will provide farmer speakers to go before clubs, conventions, and conferences of business men and city folks and give them briefly and clearly the farmer's viewpoint on economic matters.

"If you can find the time, we wish you would write us an article telling more in detail about this matter, and explaining why it is a good thing. We believe it is a good thing, and we want FARM AND FIRESIDE readers to know about it."

I will try to do that.

First of all, the New York Farm Bureau proposes to select real farmers, whose actual experience with the problems of the country and their first-hand information on farm topics will enable them to present the facts. These men will be made available for gatherings in our cities with the thought of a frank presentation of the actual problems of the country; and a chance to ask questions regarding the facts of food production, country living, and all the matters now so vague, or wholly unknown to our friends in the cities, will be given to the city folks.

The laborer is interested in food, and wants it not only in abundant supply but also of good quality and as cheaply as it can be produced. This is perfectly right. It should be done. But in doing this he must be made to know that the products of his own toil in turn flow back into the country, and that its price reflects itself in that very food which he must buy.

That he can ill afford to make scarce and unnecessarily costly the manufactured articles which must play a part in his food production, unless he expects to meet these same high prices flowing back toward him when he buys the food in the production of which his own labor figured, will be shown him.

These plain farmer speakers will go out with no other purpose than plainly to tell of farm living, its problems, why boys go from the farms, the changing costs of food production, and all the changed economic conditions effecting new prices. This program will be worked out through the American Farm Bureau Federation through our various state federations, so that everywhere the justice of the farmers' demand for higher prices may be based upon a full knowledge of facts he is willing to make known.

There seems little possibility that food will cost less than now, but may cost more. Certain it is, we must have it, and unless some fair means is employed to protect

the industry of food production we may be assured that it will decline. There will always be farmers, no doubt, but whether there will be enough so that the increasing mass of non-producers may be fed is quite another matter.

To the proper solution of this question the nation may well address its best thinking. Sarcasm and irony will not do. Shall the farmer, goaded on and discouraged, go to a point where in despair of relief or proper compensation he shall stop and take his place in the list of those who are seeking short hours and big pay? Let us hope not.

The great farm bureau federations seek no such thing, but by every fair means at their command will seek to try to lay, calmly and dispassionately, before our great cities the fairness of the maxim that he who will not work shall not eat, and that in a country where we have no serf class we can ill afford to awake some day to the startling fact that too many of us have gone to town and the larder is empty.

After all, most of our prejudices are the result or lack of knowing the other fellow's viewpoint, and whether, after all, he may not be much in the right.

The much cussed and discussed problem of food production, and whether there will be enough for us all, or whether it will be at a price level commensurate with our ability to buy, will never be solved, or even fairly well understood, by simply standing aloof from the real facts and saying what ought to be done, without fuller knowledge of the truth.

In this day of specialized labor we know little beyond our rather narrow field. The other day, having a little time, at Silver Creek, New York, by the courtesy of Superintendent Kinsey, I visited one of those interesting shops where they make the grain-cleaning machinery which goes to China, India—in short, all over the world.

After a thorough visit to all the interesting departments, we stopped at a little room where two men were tying brushes—tampico bristles into wooden backs, wired firmly in, to brush the grain as it winds its way through the interesting and clever machines where wheat, rice, corn, oats, and all kinds of grain is scrubbed and graded, and in various ways prepared for food or seed. In that brush-room two men were working. Hand work, and well done. One man told us he had tied those brushes for forty-six years. Well, perhaps we think our task hard, but to most of us that was a real servitude. Of one thing you may be certain: he knew how to make those brushes. He had done it for forty-six years.

The other day, at the hearing at Albany upon the bill seeking the repeal of the so-called Daylight Saving Law, one splendid young fellow from the big city of New York, asking for the retention of the law, spoke rather disparagingly of the pleas of the farmers that the law did them harm, and gave the reasons.

Our fine young friend told us he lived at fourteen and fifteen years of age on a farm, and that he had a brother-in-law and some uncles who lived there now, and that we couldn't tell him anything about farming.

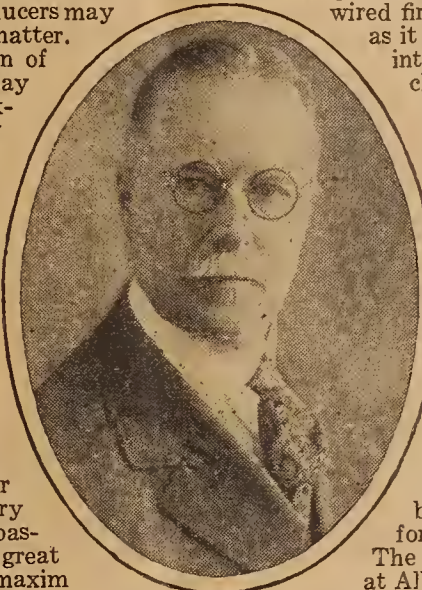
Well, that is probably so. But that was

not because he knew all about farming by any manner of means. Lots of splendid men in this State have lived on the farm more than the forty-six years of our friend the brushmaker, and yet would be ashamed to say in any presence that they knew all about farming, or even much at all about it.

With the mystery of plant life about us, the wonders of soil chemistry, seed selection, plant pathology, insect life—on, on, on, into the very mysteries of God Himself—a man is audacious who says he knows much even of the wonderful things of the farms and the fields.

After all, there is no more wonderful story than God has written on the fields. No wonder men love them, and no wonder that they have to work so hard to solve the riddle of how plants grow, how best to foster them and how to keep pace with the keener minds of those trained by the schools of agriculture to get up the ladder faster than those less keen.

If anyone knows anything about these problems, and how, in some mysterious [CONTINUED ON PAGE 36]



This is Mr. Strivings, author of this article



"How I Became the Owner of a Farm"

Prize Contest Letters by Readers of Farm and Fireside

First Prize

Winner: R. P. Blair
Sidney, Montana

I WAS born and reared on an Iowa farm, where I worked for my board and clothes until I was twenty-one, and trapped muskrats at 10 cents per before and after school for spending money.

My one great ambition was some day to own a farm and a home of my own, and to have a little wife to help make it homey, but I had decided never to ask a girl to be my wife until I had something to offer her beside my bare hands.

When I was twenty-one I started out to shift for myself. There was nothing in sight except to work on a farm, and to work on a farm was all I had ever done.

So I went to work at \$22 a month. At the end of the work season, save as I would, I had only accumulated a little over \$100. About this time I took a day off, and sat down to think it over. I had made in one year about enough to buy one acre of Iowa land. At that rate it would be years before I could hope to even rent a farm, let alone own one. So I finally decided to go West, and look for a homestead as the only way of getting a farm before I was old and gray.

So I packed my belongings in a carpet bag, and with my \$100, and another hundred that I had made catching rats and skunks, I headed for Montana.

I finally got located on a 160, thirty-two miles from the nearest railroad point, with the Missouri to cross on a ferryboat to get out to town. But 160 acres of raw prairie lacks a lot of being a farm and a home. There wasn't a house or even a fence post in sight. I got a 12x16 shack built, and as my 200 iron men were beginning to look awfully sick, I got a job working on a ranch four miles away. I worked for ten months on this ranch without being to town but once, so you can guess I saved my money.

The next spring, 1908, I bought a saddle horse—the first horse I had ever owned—and got a job herding sheep.

That fall I bought three more horses, and the next spring I started farming. I succeeded in getting 67 acres of crops. Crops were good that year, but a hail and wind storm hit my wheat about harvest time, and I lost about half of it. But I had made enough money to pay up what few debts I had made.

In 1910 all my profits went for a team of horses, as one of my others had died. The next was a very dry year and crops were poor, but in the spring of 1912 a neighbor had improved and wanted to sell his 160 acres for \$1,400. I had \$200 in the bank, and \$100 was the least I could get along on till crop time. But I went to my banker and, succeeded in borrowing \$100 on my personal note, and I assumed a mortgage of \$600 that was already on the place, and bought it. That fall we had a bumper crop, and I paid off all I owed the bank, and had several hundred dollars left to go on.

The years 1913, 1914, and 1915 were all fairly good years, and I made money every year.

The fall of 1915 I had a chance to sell my 320 acres and buy a 680-acre farm just across the road. I sold for cash and bought for cash. I lacked a few thousand dollars of having enough to close the deal, so I went to my banker and asked him how much I could borrow on my face, and I was greeted with the cheery answer of "all I wanted."

And that winter I went back to old Iowa and persuaded the best girl in the world to be my wife. The next year I paid off all I owed the bank, and now, instead of being thirty-two miles from the railroad, I was six miles to the county seat and one mile to school, and in ten years my

ambition to have a farm and a home of my own was realized.

In 1917 I built a new barn costing \$1,400, and paid for it.

Yes, but I'll bet he got it in the neck in 1919. Montana was burnt to a crisp in 1919. But was she? My crops never had a rain on them after they came up, but I threshed 1,340 bushels of wheat. My farm showed a labor income of over \$900, after deducting all expenses and six per cent on the investment, and this has been about the driest year in the history of Montana.

My neighbors call me lucky, and say that if they threw me in the Yellowstone River I wouldn't get wet. But am I? One of my mottoes has been, "Luck is having sufficient gray matter to know that

the horse was dead. She had put her head through the head stall and choked to death. Yes, we cried. We had gone to Douglas County, Missouri, hoping to make a home, and about all we found were rocks, snakes, and disappointments.

The first crop was destroyed by drought. Our health was bad, and we had no money and no feed. So back we came to good old Illinois, where my husband went with a threshing outfit at \$1 a day, while I stayed with his parents, helping in the work to pay for my board. Then, in winter, he worked at a sawmill at \$1 at first. Later he received 25 cents more. But that was not home to us.

Then he bought 80 acres, all in timber, cleared a spot for house and garden, built

All has not been smooth sailing. I have spun the thread of both wool and cotton to weave into clothing. I also did knitting. Many are the times I have parched wheat to make our coffee, and used molasses for sugar. I have helped to do the harvesting of all kinds of crops, as well as plant them. It takes grit to pay for a farm. You have to get down and dig to beat the band. It is appalling to see so many people without a home and some of the men getting \$200 a month, saying, "I cannot save a dollar." The answer is plain—they want to have a good time now and let the future take care of itself.

On November 5, 1888, another son came to brighten our home. Then, indeed, I was a proud mother. I had helped to pay for a farm home, and while helping to make that home I also had brought four healthy sons into the world. But my first son lost his life in a fire. That was the hardest wound to heal up. My sons are all doing well in homes of their own. Husband and I have a good 80-acre farm, a nice home in town, and something in the bank.

And yet, in these days, our worries over, when I go spinning along in our new automobile, I don't feel the thrill that I had when I wore so proudly that calico dress while gaining a home in the long ago.

Third Prize

Winner: W. H. Blevins
Locust Grove, Arkansas

FIRST, to commence with, my father died and left my mother with six children, and after his debts were paid it left us nothing except a little household goods, and I, only eleven years, being the oldest one of the children, and Mother not very stout, and no relations able to help us, made a hard road for us to travel. But Mother was

a great believer in "Where there is a will there is a way," and always taught me that way, and made me believe when a boy that I could do anything that anybody else could do; and I find that there is a lot of truth in it.

I stayed at home with Mother and the children until I was twenty-two years old, to help them make a living. Have worked many a day for 50 cents, cut wood for 60 cents, and made rails for 50 cents per hundred for the support of my mother and sisters. In the fall of 1899 I picked cotton for 40 cents per hundred, for money to get married on. Got married the seventeenth of December that year, and stayed in the house with Mother to help them make another crop. That fall my wife and I moved out for ourselves, after dividing the crop with Mother.

We had but very little to commence housekeeping on. I had to borrow money to buy a team and wagon to commence farming. Rented land three miles from home at a big standing rent. I tried it out for five years, but couldn't see that I was gaining anything, and my desire was to own a home, so I thought I would make a change.

I sold out everything except what little we had in the house, payed what I owed, and moved 30 miles to Oiltrough Bottom, situated on White River, a fine farming belt. I went to work in a cotton gin for \$1.25 per day. Next year, 1907, I put a crop in on shares. There was an overflow and in May, dry weather followed, and I never made enough to pay a small store account, so I was obliged to make that year look as though everything had gone against me, and no home was in sight.

But I couldn't keep from thinking of what my mother had taught me—"Where there is a will there's a way." So the landlord came around and asked me what I was going to do, and I told him that if I stayed able to work I was going to make a crop. I rented 40 acres of good land. I borrowed \$300, and bought the best pair of young mules that I could find for the money. I went to work without any help, or money. We had four small children, and my wife had her hands full to care for them. We never bought anything but what we had to have. I made the crop with an old cultivator a man gave me. I did not want to go into [CONTINUED ON PAGE 55]



Myself and the first horse I owned



My old homestead taken in 1909. Note the water barrels—for three years I hauled water from the creek 1½ miles away



My new home taken in 1917

hard work and study is the secret of success."

I always take about a half-dozen good farm papers, and when I haven't anything else to do I study them. What I don't have time to read in the summer I lay away until winter.

I keep about twenty head of cattle, milk four or five cows, raise a few pigs, and keep a flock of chickens. Last summer I bought a silo, and this spring I expect to get a tractor. I owe no man a cent, and I have a snug nest egg in the bank and in Liberty bonds.

I have borrowed considerable money, but the thing they don't like about me is that I always pay it back so quick.

I have done nothing that anybody could not have done with a little ambition, as I am not a strong man and weigh only 135 pounds; but I try to make my head save my heels.

Second Prize

Winner: Ellen Savage
Dahlgren, Illinois

HOPING this may help others to see daylight through the wilderness, I will tell our experience in buying a farm in 1874. February 3d I was married to a red-headed man; you know their make-up—grit and determination.

To begin with, we had one wagon, a horse and harness, one bed, a few hit-and-miss dishes, a 10-bushel box which we used as a dresser, and a cookstove; and my husband made a chest, two tables, and a safe. We had to take the wagon and trade it for another horse and plow. Next morning

a two-room box house, and then cleared a field for corn. Yes, I helped. I wrapped my baby up and placed him in the hand sled. Sometimes I helped split rails, and always piled brush till noon. Then home to cook dinner, and then back to work again till time to milk the cows.

As time went on, another son came to gladden our hearts.

There was still no money for hired help, and the corn and sprouts were running a race. A friend said to me: "You cannot help now, with two babies." But where there is a will there is a way. I took my children to the field, placed them on a quilt, tied a stout strip of cloth around Baby's waist, and the other end was tied to the fence. Then I asked God to take care of my precious little ones while I followed the plow with the hoe till time to feed my little ones and get dinner. Then back again for days till all the sprouts and weeds disappeared and the corn shone like a child's clean face.

We rented good wheat ground, and also raised some on our own farm to sell, and sold a bunch of hogs each spring and fall; also calves, and sometimes a good span of horses. Every dollar we earned went to make a payment on our home. What few clothes we had were bought with eggs. One calico dress was the best I had to wear to church—I went every Sunday. My dress was paid for, and I was proud of it.

I tried every way to do my part. I have made several gingham dresses for neighbors, and in payment I received one gallon of soup beans for each dress. Beans were cheap then. I also made fine shirts for men, and received one pound of meat for each shirt.

Two Young Men Who Have Made Sorghum Sirup a Paying Crop Again

By J. J. Willaman

Of the Minnesota Agricultural Experiment Station

TWO Minnesota men last fall demonstrated that the manufacture of sorghum sirup can be made a profitable industry. They made over 60,000 gallons of sirup; they got 20 gallons from a ton of cane where they used to get 15; and they paid such prices for the cane that the farmers of the neighborhood came in for large shares in the success of the industry.

Beginning a dozen years ago with a small and inefficient outfit, the Waconia Sorghum Mills gave no more promise of financial success than did its hosts of contemporaries. About eight years ago, however, the factory was taken over by two sons of the founder of the mill. They were convinced of two things:

First, that people still like good sorghum sirup, and are willing to pay a fair price for it; and, second, that the manufacture of sorghum sirup in order to be a financial success on a large enough basis must graduate from the class of small-scale industries into that of large-scale production.

To put sorghum sirup manufacture on the latter basis, however, was no easy task. They labored hard and long and intelligently, and progress was slow. But such application to a problem was bound to be crowned by success, as is application to any problem anywhere, and their annual production of sirup climbed gradually from 20,000 gallons to 30,000, to 42,000 and, in the present year, to over 60,000 gallons.

Their present factory is but little larger than the original structure, but there is packed into it machinery for the rapid and effective conversion of sorghum cane into high-grade sirup that is a surprise to those who know only the old type of outfits. And since the farmers of that neighborhood are among the loudest in their acclaims and praises, there is a story worth telling to the readers of this journal.

TO BEGIN with, the mill has been able this last season to offer from \$7 to \$9 a ton for cane, depending on its condition. The cane has yielded unusually heavily this year, from 15 to 18 tons per acre prevailing on most of the farms. When it is remembered that the total cost of growing, harvesting, and hauling to the mill does not exceed \$40 an acre, the size of the net profits to the grower is obvious. And there is no wonder, then, that this community is ready to back the sorghum mill, and maintains that it is a distinct advantage to the neighborhood to have another industry handling a cash crop for the farmers.

The mill accepts fresh cane, wilted cane, or stripped cane. It is equipped to handle it in any condition, and to produce the same kind of sirup out of all lots of cane.

These methods are in marked contrast to those followed in the old small mills, where each farmer's cane was piled separately, milled separately, and paid for in sirup from that cane. At that time the cane was headed and stripped by hand in the field, and both leaves and heads left there to decay. Now a corn binder is run through the field, and the bundles hauled directly to the mill. Here the leaves make good fuel, and the seeds are carefully saved for feed or for planting.

What machinery has made possible these profound changes in practice at this mill? Since the growers in this region, and those in all other regions who are interested in community betterment and in the introduction of new industries which will aid in diversifying the type of agriculture in that region, are interested in knowing the methods of converting raw crops into manufactured products, a few words concerning the present methods in the Waconia factory may not be out of place.

To begin with, the objects in mind in designing new machinery and processes were threefold: to obtain more sirup from

the same amount of cane, to obtain better and more uniform sirup, and to obtain it more cheaply.

All three endeavors have succeeded.

The first machine removes the seed heads; next, a thresher pounds out the seed; and then the latter are elevated into

"Not a bit of it," was the reply. "I admit we have spent years of labor and considerable money in bringing this factory to its present status, but every piece of machinery here makes for economy."

"For example, we are getting 20 gallons of sirup per ton of cane this year as com-

the cane that will be grown within a three-mile radius. Our plans for the future are to perfect this mill one more year, and then to duplicate it at other points in the neighborhood, ultimately having a chain of factories of the size of this one."

Some of the most noteworthy things these men are doing concerns the agricultural end of the business. They have always carefully selected enough seed to supply all the growers in their neighborhood free of charge. This insures them the best yield and quality of cane.

Not content with this, however, they solicited the services of an agricultural chemist to improve their methods of seed selection. He decided, in the first place, that the continual selection of large, well-filled seed heads was not desirable, since the plant cannot manufacture large amounts of starch for the seeds, and at the same time large amounts of sugar for the juice.

THEN, a chemical analysis of a large number of individual stalks revealed a wide variation in their sugar content. This meant that by continually selecting seed from stalks that gave high yields of juice with high sugar content a strain of sorghum could soon be built up which would be much superior in sirup-making qualities to the strain now in use.

Therefore, during the present season the sorghum mill carefully hung up in a shed about 100 seed heads, each one numbered, and the record of each one preserved in a ledger. These 100 were picked from about 10,000 stalks. Five points are being selected for: Earliness in maturing, keeping qualities in the shock, medium-sized seed head, high yield of juice, and high sugar content. It is safe to predict that within two or three years this company can put on the market every season thousands of bushels of pedigreed sorghum seed which, when grown in competition with the other strains of Early Amber, will be found far superior. Needless to say, the growers as well as the manufacturers are interested in cane with the above qualifications.

Is the market for sorghum sirup such that many other communities could establish factories like the above, and still dispose of the sirup at a good profit for both grower and manufacturer?

The writer does not hesitate to say that it is. The great majority of people do not use sorghum sirup at the present time simply because it is not on the market. It is not on the market because, as stated above, its manufacture on a small scale has been an unprofitable business. It can be made profitable, however, as shown by this account of the Waconia factory.

The managers of the latter do not turn a finger to dispose of their entire output. It is usually ordered weeks in advance of manufacture.

Many times the present crop could be disposed of by a little soliciting.

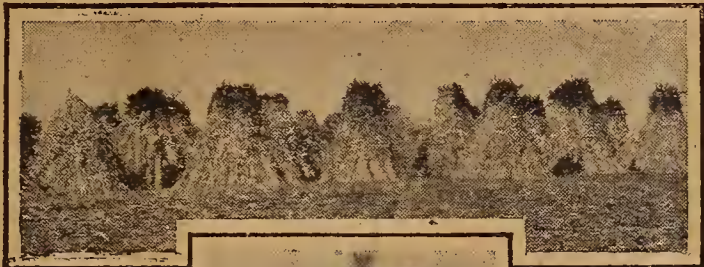
In short, the possibilities of sorghum-sirup manufacture becoming an important industry in many communities are exceedingly good. Farmers of such communities would have an outlet for a profitable cash crop.

Rides on Hearse, But is No Dead One

KOOCHICING County, Minnesota, is immense in physical proportions, and its agricultural problems correspond. But M. M. Abbott, its county agent, has a way of getting there. He says:

"In doing farm-bureau work I have had to travel by auto, passenger train, freight train, logging train, gas car, hand car, ox team, livery team, horseback, motorcycle, bicycle, launch, rowboat, canoe, and on foot. One trip of 22 miles was made on a hearse."

Farm Press News.



When green cane is brought to the mill it is shocked and allowed to cure for several days, or even weeks. Because of the great height of the cane the past season (12 to 14 feet in many cases), there is difficulty in making the shocks stand. Each shock contains about one ton of green cane



The evolution of the sorghum-sirup industry. The mill on the left made in a season about 600 gallons of sirup of uncertain quality, with great expenditure of labor per gallon of sirup. The one below is at Waconia, Minnesota, and made this past season about 62,000 gallons of uniform high quality, with the employment of machinery that greatly reduced the labor cost



A pan evaporator over a fire arch, housed in a building typical of the old-fashioned sorghum-sirup plant



a drier, from which they emerge, a few hours later, ready to be sacked and sold for germinating purposes. The cane next passes into a series of cleverly designed machines which separate leaves from stalks, the leaves are carried by belts to the furnaces, and the clean cane to the mills for pressing.

A six-roll mill is used, with very heavy pressure. The cane pulp between the two sets is sprinkled with water to dissolve out an extra two per cent of sugar. The bagasse, or spent cane, is fed directly into the furnace.

The juice is next subjected to a process of defecation. It is limed to a certain definite point, and is then brought just to boiling. This causes the coagulation of impurities into a sediment. Instead of waiting for a settling process, a filter press takes the whole tankful—scum, sediment, and clear juice, all mixed together—and by a rapid process of filtration makes a clean-cut separation of the juice from all the suspended impurities.

THE sparklingly clear juice is now ready for concentration into sirup. This year the Waconia mill has installed a vacuum evaporator similar to the ones used in concentrating juices in sugar and in corn-sirup factories, and milk in condensaries. By boiling down the juice in a vacuum, it boils at a much lower temperature, hence requires far less steam power; also, the resultant sirup is clearer and lighter in color. Visitors at the mill this year are amazed at the high quality of the sirup. It is just as far removed from the old black, strong, sorghum "molasses" as is modern maple sugar from the product made by the Indians.

"Machinery must be a fad of yours," one of the proprietors was told.

The spray pond outside the Waconia Sorghum Mills plant. The water for condensing the vapors in the vacuum evaporator is cooled in this way

A familiar type of sorghum press twenty years ago. This slow and wasteful machine helped to discourage the small-scale production of sorghum sirup among farmers



pared with 15 gallons last year. Several factors contribute to this. In the first place, by removing the leaves we get more juice because the dry leaves absorbed considerable of it. Then, by sprinkling the cane between the two sets of rollers we extract an extra two per cent of sugar. By filtering the juice we don't waste any sugar in the scum and sediment. This alone accounts for an extra two gallons per ton.

"Another economy is in fuel, since by burning the leaves and bagasse direct we need only a few bushels of coal a day; another is in the vacuum evaporation, since we now boil with five pounds of exhaust steam instead of 80 pounds of live steam, as formerly; and another is in conserving all the seed for planting purposes."

"Will you enlarge again next year?"

"No, the present mill will consume all

Clara Ray, the Girl Whose Calf Won an International Championship

By Wheeler McMillen



Clara and Bobby

CAN a girl really accomplish things on a farm? And do young folks honestly have a chance on a rented farm?"

If one is interested and wants to know, let him go over by the Hoosier village of Mellott, and ask where Charlie Ray lives. Up a long, graveled lane the

home of Charlie Ray may be found. He is a renter. The tenant house he occupies is a plain little old-fashioned white structure.

In his own neighborhood it is just as Charlie Ray that he is known. Out beyond the borders of the community he is known best as Clara Ray's father. In the front room at home stands a handsome silver cup. Pinned above it are purple and blue ribbons, and a gold medal. The purple ribbon is a grand championship ribbon from the International Live Stock Show. Clara won the ribbon and trophies with Buster, the calf that stood above all the others at the 1919 International in the boys' and girls' feeding classes.

So it is not at all remarkable that Charlie Ray believes girls amount to considerable on the farm, nor is it surprising to find that he thinks young folks have a pretty fair chance, even though their parents may be only renters.

Miss Clara Ray herself, a maid of seventeen, with dark hair and clear blue eyes, and a fair outdoor complexion that needs cosmetics neither to hide or improve, has positive ideas on the subject of girls taking an active interest in farm work.

"I think every girl on the farm should have interests out of doors as well as in the house. They give her a broader outlook, and will make a better woman of her. I think one has more energy too, when one gets out and tries to accomplish something worth while.

"I hope there will be more girls to take an interest in club work, especially in the feeding of calves and pigs. I am looking forward to the club work this year, and hope to feed another calf or a pig that will be a prize winner."

IT MAY be observed right here that if there is a reader who feels that a girl can't be a hustler and an achiever outdoors on the farm, and be downright good-looking at the same time, let him glance at Miss Ray's picture.

More than in generalities about the place of girls in the world, Miss Clara is interested in actual farm practices and accomplishments. She kept an accurate and detailed record of the feeding of her prize-winning calf. What it cost to feed him, and how it was done, she can tell, to the last item. Here is the history of Buster, and how he was made into an International grand champion, in her own words:

"Buster was born April 22, 1918. He was purchased of Edwin Layden of Tippecanoe County, Indiana, March 5, 1919. At the time I purchased him he was eleven months old, and weighed 750 pounds. He lost 10 pounds on the long ride to his new home, so he weighed 740 when he went into his new stable.

"I began feeding him a ration of shelled corn, oats, cottonseed meal, and clover hay. His previous owner had fed him silage, cottonseed meal, and hay. The change from green to dry feed did not affect him very much, and by the first day of April he had gained 72 pounds.

"I increased his ration in small portions each successive month. In May, June, and July he gained from 75 to 90 pounds a month.

"This is the second year I have fed a calf in the club-work projects. This year I learned many new things. Chief of these is that a gentle steer is a better feeder than a wild one. My experience last year gave me a better idea of how to select a calf. Mr. Kerr, our township club leader, and my father helped me to pick my calf this year.

"I consider one of the most essential requirements is to get a calf of good individuality, and then feed him right. One must keep him smooth and free from lumps. One way you can pick a calf of gentle disposition is to note that his face is broad, and not very long from eyes to nostrils.

"The first results of my work in feeding Buster came when he was shown, with the

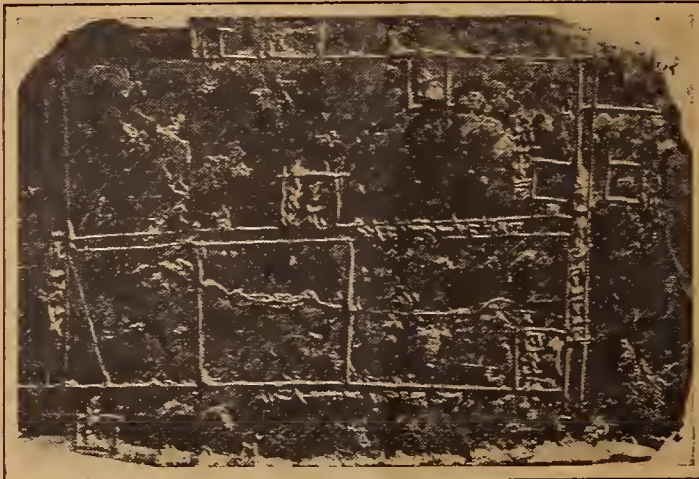
nings were a free trip to the International Stock Show at Chicago, a silver trophy, and \$10 in cash from the Citizens Bank at Covington, our county seat, and a gold medal from the American Shorthorn Breeders' Association.

"Buster seemed to be a general favorite, and showed so much quality that his friends and admirers insisted on my feed-

The Plan of a Farm Laid Out 2,500 Years Before Christ

DISCOVERIES in the Nippur collection of clay tablets made by the museum of the University of Pennsylvania have made it possible to write with remarkable accuracy and attention to detail the actual history of many kings of Babylonian dynasties who ruled as far back as 2,500 years B. C.

In every instance where the records of a king were found to be numerous in the ancient library maintained at Nippur, it has also been found that



Ancient map of a large farm near Nippur, obtained by the museum of the University of Pennsylvania in Babylonian explorations

such a monarch paid particular attention to the agricultural development of his lands.

The photograph shown here is a plan of fields, roads, and canals of a large farm near Nippur. This illustrates how carefully the irrigated fields were marked out by the ancients. From the evidence in the museum it is reasonable to suppose that no Babylonian farmer after 3000 B. C. ever thought of trying to operate a farm without first making a plan of his intended operations, assigning fields to the various kinds of grain and other staple products, pasturage, etc. He had a plan, just as good farmers have to-day.

Attorneys who have studied these ancient records find that the basic laws of contract used 5,000 years ago have changed but little since then. WM. A. MCGARRY.

other calves, in the boys' and girls' clubs at the Fountain County Fair. He went to the fair September 1st, weighing 1,290 pounds, a gain of 550 pounds in the six months since March 5th.

"The judge, Mr. W. B. Krueck of Purdue University, pronounced Buster to be the best Shorthorn calf in his class. My win-

ing him for the International Club Show. I took him home, and began giving him a ration of corn, cottonseed meal, linseed meal, clover hay, and boiled rye. When we started to the International he weighed 1,430 pounds.

"In the Boys' and Girls' Club Show, Buster was pronounced not only the best



And here is the whole Ray family except the boy, who is in Purdue Agricultural College. From left to right there is Clara, her mother, Frances, and Charles Ray, her father. The young man on the little stool is "Bobby," the baby of the family



This is Buster, the grand champion calf of the last International, as he looked on March 5, 1919, when Clara Ray started feeding him on her father's farm at Ada, Ohio

Shorthorn calf, but also grand champion over the other breeds he competed with.

"A remarkable feature in developing and fattening this calf was that he was fed and finished on a dry ration.

"At the International I won a \$50 prize from the exposition management, and \$50 from the Shorthorn Breeders' Association. On December 6th Buster was sold to Armour & Company at 29 cents a pound, bringing me \$368.30. You may be sure, I was sorry to say good-bye to him after all the success he had helped me to win."

Here is Miss Clara's summing-up:

Selling price.....	\$368.30
Prize money	110.00
	<hr/> \$478.30

Purchase price.....	\$105.00
Cost of feed.....	100.00
Transportation.....	55.00
Interest	55.40
	<hr/> 315.40

The difference.....\$163.90

A closer record of gains and costs was kept up to September 1st, during the first feeding period, than thereafter. Miss Ray calculated that up to that time it cost nine cents for every pound Buster gained, and he added 3 13-179 pounds per day during the 179 days. During July he made the tremendous acquisition of 160 pounds, an average daily gain of 5 5-31 pounds.

Charlie Ray does not believe that being a renter is necessarily a handicap to a man.

"Just because he may not have the capital needed to buy a farm of his own right off, a man need not think he cannot succeed and cannot be happy," is the way he looks at it. "I have four children. The oldest son is in Purdue University, taking the four-year course in agriculture. What he may lack in capital to start with in life I hope he will make up in education.

"Clara is a senior in the Mellott High School. Frances is in the grades, and Robert is too busy to go to school yet. All four are bright and healthy, and if I never own an acre I will feel that I have achieved some measure of success in bringing into the world and preparing for life two strong boys and two sensible girls. We make all we can, and we save what we can. We all work, we all have a good time. We don't make a practice of feeling poor. And we'll own a farm in good time, never fear."

Feeding champion calves is not his daughter's only accomplishment. She stands high in her class at school. And when these pictures were taken she had to be coaxed out of the kitchen, where she was mixing up a Christmas cake.

How to See the Wind

CHOOSE for the trial a windy day, when the air is free from rain or snow. Take a bright, clean hand saw, or any other polished metal object about two feet in length and having a straight edge. Hold the saw or metallic surface at right angles to the direction of the wind. Incline it at about 35 or 40 degrees to the horizon, and with the back up, so that the moving air, in striking the surface, will glance upward and flow over the edge of the metal, as water flows over a dam.

Sight carefully along the edge of the metal at a sharply defined object, and you will see the wind, or air waves, pouring over the edge in graceful curves.

New York Sun.

What Time of Year Will Your Cattle Bring the Best Price?

By Tom Delohery

WHEN shall I market my cattle? In the nine years I have spent around the Chicago stockyards I have talked with hundreds of cattle feeders, and I know this question often comes to their mind when they have cattle in the feed lot.

Often, by careful insight into the future, you can avoid losses in marketing. It is not uncommon to have men say that if they had marketed their cattle a month earlier they would have got from \$10 to \$15 a head more for them. Often this mistake wipes out a feeder's whole profit. In this article I will do what I can to show you how to avoid that.

Looking at the thing through the eyes of a feeder, I believe your marketing problem is just a big problem as was the matter of rations before our experiment stations lent us a hand.

It was through a hunch I got from a feeder that I looked into the situation to see if I could find anything in past marketing records which might be a help to you in the future. The charts which accompany this article are the result of my work. I hope they will help you to market your stuff profitably.

These charts are the daily averages of the different weights of cattle, taken by months, for a period of ten years previous to the war. I averaged the prices for each month for this period, and these are the prices on the graphs. They do not tell what prices will be received over the various months; they merely show the high and low times of past marketing years.

THESE figures I obtained from records of the stockyards at Chicago. Similar figures for the various markets can be obtained at the various yards, or from the market papers, and kept by you as you go along.

The charts show the seasonal demand for five weights of cattle—750 to 1,050 pounds, 1,050 to 1,200 pounds, 1,200 to 1,350 pounds, 1,350 to 1,500 pounds, and 1,500 pounds up.

They show that cattle upward of 1,200 pounds find the best demand up to June, or before the real hot weather sets in. The market from the first of the year is on the rise, reaching the peak in this month. The cattle market, as a whole, goes in a cycle over the twelve months, the low times being in the end of the old year and the first of the new year.

At the time this light beef is highest, in June, people are not looking for fat meats, and the receipts are not very heavy. Also a lot of people quit the city for the country about then, and, on a whole, consumption of meat is not heavy.

Beef upward of 300 pounds heavier is bought at top price in August and September, as the charts show. By the time it is ready for market, the weather is somewhat cooler, and people have returned to the city from their summer homes. The tonnage is greater, of course, but the demand is ample to take care of it.

It is seldom now that the market gets cattle weighing 1,500 pounds and over. The high cost of feeds and the early maturity of cattle prevent the feeding out for great weight except in isolated cases.

What Happened When Adam Told Eve What He Wanted for Dinner

WHEN you just sit down and wonder what the market is going to be for your farm product, it is very confusing, because you don't know. But when you stop to consider that the market demand is merely the human demand, you have a way to get at it.

Delohery points out, for instance, that you will receive the highest price for a certain kind of beef on the hoof at about the time there is the greatest demand for that kind of meat in the public's appetite.

The market for the meat you are producing is made by Mrs. Jones going into the butcher shop and saying, "I want a pound of beef." If Mrs. Jones doesn't ask for beef, you will find no market for it.

When Adam and Eve were the only persons on earth, the market for this, that, or the other was easy to determine, because Adam and Eve were the market. If Adam said, "Eve, old girl, let's have some succotash to-day," and Eve said, "All right, Adam, I don't care much for it, but I'll get you some," that created the world market for corn and beans. If Adam chose something else, there was no world market for corn and beans.

Knowing the market in those days was a cinch; but in these days, with seventy billion people, and all of them deciding three times a day what they'll have for meals, knowing the market is not such a snap. Not being able to make a mouth-to-mouth canvass each day, we producers have got to study average demands in the mass. And that is all that Delohery's article tries to do.

The American farmer's market is chiefly among people in the United States, and to know what they will want and when they will want it is knowing the market pretty well. But it is well to watch what other people in other countries are demanding, and to know whether we have the facilities and they the credit or the money to get it, because if foreigners want what we want at the same time we want it, the demand increases and your market is better. If nobody wants your product, or hasn't the money or credit to buy it, it is no use to grow it.

There is much more to the problem of marketing than merely this, but here you have the unalterable foundation of it:
Human demand makes market demand.

THE EDITOR.

And with markets fluctuating the way they do, it is seldom that a feeder takes a chance on a long pull, unless he gets big cattle which are very thin, and he has plenty of good roughage to carry them through.

It is but natural that cattle carrying lots of fat are wanted in cold weather, beginning in October, and lasting until Christmas, when the real prime holiday beef is wanted. Most of the heavy cattle come in December. The charts show that the prices for the other weights of cattle generally drop off at that time, due in great measure to the large amount of poultry eaten at this time of the year.

After the first of the year, when the people begin to go back to regular food, the beef market starts upward. Of course, the receipts at this time are very heavy. As spring comes on, beef prices go up, for the cattle coming to market are out of feed lots where they have been grain-fed all winter, and are in good condition, with plenty of quality.

It will be noted that along in September the price of cattle upward of 1,350 pounds starts to drop off. This is due to big receipts, the corn belt starting to empty its pastures of grass cattle, and by this time range cattle are coming in good numbers. The supply is liberal, and naturally price reduction follows.

Feeding cattle begin to get cheap at this time of the year, too, because of the plenitude of range cattle and thin stuff off grass. The feeder dealers have plenty of opportunity to buy cattle without running into too serious competition with the packers. By this, I mean, the packers and feeder men compete for thin cattle, which can be used

for canning or cutting purposes, or sent back to the feed lots.

I got the idea of making these charts from J. W. Westfall of Grant County, Indiana. I met him one day at the yards, after he had bought a load of feeding cattle. We struck up a conversation, and I asked him what he bought and how long he intended to feed it.

"I have bought a load of feeding cattle averaging around 800 pounds," he said. "I intend to keep them until along the latter part of May or June. There is plenty of silage to carry them over for a finish on corn. At the end of six months I expect they will have put on close to 400 pounds."

"Why do you set a time for marketing the cattle; and why do you intend to market them in May or June?" I asked.

"In the first place," he replied, "the market at this time of the year is at the high point, and I want to get as much as I can. I have looked up the figures on the market, in addition to watching it for a number of years, and I know that the latter part of May or in June there is a good demand for well-finished cattle, and prices are high."

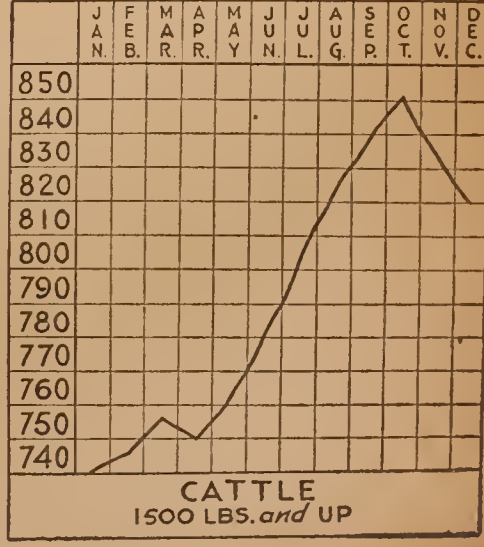
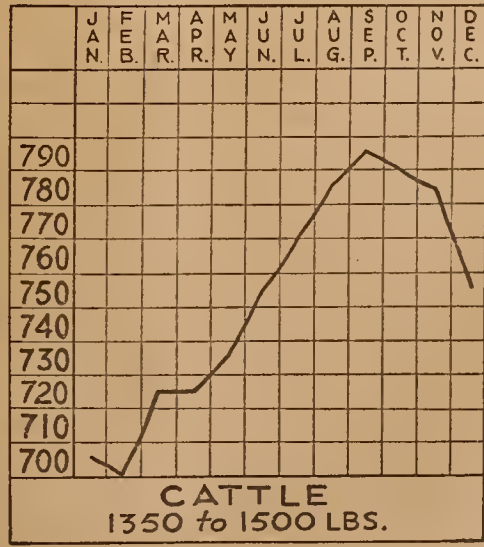
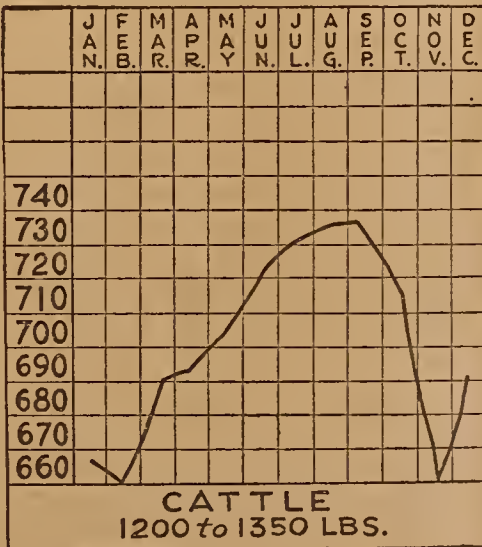
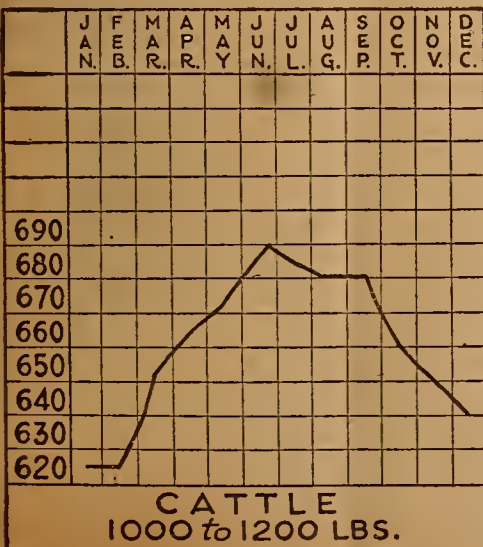
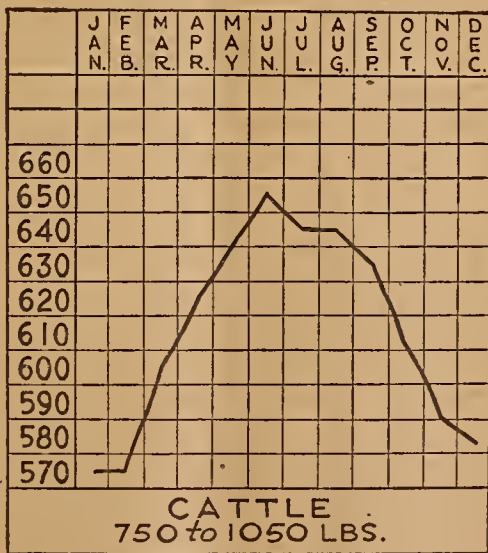
"As to figuring on feeding so long: Before I lay in any cattle I always take stock of my feeds. I have a silo, and I know it contains so many tons of silage. By figuring a feed of 30 to 40 pounds a day per steer, it will last so long. With hay, and some fodder, perhaps, together with cottonseed, the steers will make good gains. Then I can finish them on corn. I figure they should average a little better than two pounds a day throughout the feeding period."

"I always find it a good idea to take stock of my feed. In the first place, I know about how long it will last, and then I can figure on buying very thin cattle, or cattle which will fatten in a short time. This saves me a lot of worrying later on. It is not pleasant to have to buy feed when prices are going up, and you don't know what the market will do."

"I generally buy my feeders in November or December, because at this time, the records show, prices are the lowest of the year. They always go with the price of finished cattle, which are down toward the close of the year."

IN WRITING market news, it was necessary for me to find out how much stuff was in the country on feed. This I did in several ways, the principal sources being talking to feeders who came to market, and by comparing the receipts of finished cattle with the shipment of cattle back to the country. First I compared the receipts of finished cattle with a year ago, and noted if there was any increase. If there was, I figured cattle were being turned back to market off a short feed. This is sure beyond a reasonable doubt, for the supply of cattle in the country does not increase very materially from year to year, if at all. The market reports of the Bureau of Markets and the daily papers generally carry these figures if you want them.

I have also observed, in watching the markets, that whatever goes up must come down. Perhaps I can best illustrate this point by comparing (CONTINUED ON PAGE 49)



Why a Firm Seed Bed Gives Me Better Crops

By Roger D. Long

MY EXPERIENCE as a farmer and as a county agent working with other farmers has impressed me with the importance of the right kind of a seed bed. I am convinced that many crop failures are due to the neglect of this very important item, and also that the average yield of crops in this country could be very greatly increased if every farmer understood and practiced correct seed-bed preparation. If you are interested in getting better yields from your crops, I believe it will pay you to give some thought to this matter.

It was not so very many years ago that the popular seed bed was one that was extremely loose. This seed bed was mellow and full of air spaces, and dried out rapidly, but because it looked good, and even felt good, many a farmer worked mighty hard to secure it.

Of course, not all of us made this mistake, as is evidenced by the development of the home-made log roller and the plank drag, as well as by the smooth steel-drum roller.

To-day farmers and agricultural experts are almost one in recommending a fine, firm seed bed. Many farmers of the United States are making just this kind of a seed bed, and increasing crop yields. An experienced alfalfa grower recently stated, "I have prepared many different kinds of seed beds for alfalfa, and I am convinced that more failures of alfalfa can be traced to a loose seed bed than to any other condition. Sometimes the farmer fails to get his soil fine enough, but very often, even when he does get it fine enough he has it too loose. Alfalfa demands a fine, firm seed bed."

Professor Truog of the University of Wisconsin in the "Journal of Soil Improvement" says: "Many farmers make a grave

mistake in thinking that the whole plowed layer should be loose and mellow. Only the surface mulch should be in this condition in order to prevent evaporation, baking, and cracking. The soil below the mulch, where the seed is planted, should be a firm, uniform mass, in order that the seed may be in close contact with the soil and thus get the water needed for germination. The plant roots must also come in close contact with the soil in order to get the water and food needed for growth."



Making a fine seed bed in one operation with the tractor

The loose seed bed is wrong for several reasons. Probably the most important reason is the fact that it loses moisture rapidly and requires an abnormally heavy rainfall to start and mature a crop. The reason that a loose seed bed is such a poor holder of moisture is because of the fact that it has so many air spaces. This can very readily be understood by a comparison of a sandy soil and a clay soil.

The sandy soil is naturally looser and contains more air, while the clay soil is heavier and more compact. A sandy soil in good tilth will retain in the surface three inches of soil only 7.8 inches of water, while in the surface three inches of clay

soil, in good tilth, there will be retained 15 inches of water.

Carry this comparison a step further by comparing a loose and compact seed bed and you will see the difference in the moisture-holding capacity of the two.

The loose seed bed will not be reinforced from the water stored in the sub-soil by heavy spring rains as will the firm seed bed. This is because the large air spaces interrupt the movement of soil water, while in the firm seed bed the air spaces are all pressed out, the soil particles compacted, and the movement of soil water established. Air space will interrupt the capillary movement of water upward, and should be eliminated by packing.

A loose soil, because of its inability to hold moisture, will not furnish as much plant food as will a firm seed bed. Plants must have their food in liquid form.

The seed bed must be the medium for the starting of the crop. Here again a firm seed bed is superior to loose soil because it supplies the moisture so essential to germination, and thus insuring seed germination several days quicker than in a loose seed bed. The firmer soil will also tide the young plant over until its root system becomes big enough and well enough established so it can seek its own food and water.

The seed bed should not, however, be compact and firm at the surface, for then surface evaporation would be excessively high and the danger from cracking and baking too great. The surface two inches should be mulched and loose. It will then dry out, and will decrease the surface evaporation, for water from the lower area will not rise beyond the mulch, and hence will not be so rapidly lost. The ideal mulch is granular in structure, and is not a dust mulch. It should also be ridged and rough, so as to absorb rainfall readily without puddling or without an excessive run-off, and also to hinder soil blowing. You can prepare this ideal seed bed if you only use the right implements at the right time.

Now that we know the essentials of a good seed bed we can consider how to go about to get it. It means not only the right distribution of organic matter and fertilizers, good plowing, the right kind of harrowing and disking, but also the right kind of pulverizing and packing. The farmer who follows the one-crop system of farming, and thus depletes the amount of organic matter in his soil, making it a hard one to handle, the man who will insist in plowing his ground when it is a little too wet, the man who does not have power enough, and so is afraid to set the disks of his harrow at a sharp angle, and the man who says that a combination pulverizer and packer is not essential are all making mistakes.

The perfect seed bed will come only from doing the right thing at the right time, all the time. In other words, follow a good system of farming, rotate your crops, make economical use of farm manure, make use of the right type of moldboard plow, the right harrow, and then the pulverizer or corrugated roller. No one implement will do the job. The [CONTINUED ON PAGE 32]

New Books We Have Read



The pool by the Queen's house in the Marquesan Islands. From "White Shadows in the South Seas."

Why is a Cannibal a Cannibal?

"**CANNIBALISM**," says Frederick O'Brien in his *WHITE SHADOWS IN THE SOUTH SEAS* (The Century Company, New York. Illustrated. \$4), "is one of the most ancient customs of man."

Undoubtedly, he thinks, it began as a question of food supply, providing an easy means to satisfy the craving for meat that is still noticed among people "whose principal diet is heavy, starchy food, such as breadfruit," and when salt is lacking. The cannibalism formerly practiced in the Marquesan Islands, where Mr. O'Brien spent the happy and eventful year of which his book is the story, was "due to a desire for revenge, cooking and eating being the greatest insults our enemy could be offered. It was in no way immoral, for morals are

the best traditions and ways of each race, and here the eating of enemies was authorized by every teaching of priest and leader, by time-honored custom and the strongest dictates of nature.

"White men and Chinese—in fact, all foreigners—were seldom eaten here. . . . It is a fact that the Marquesan disliked the flesh of a white man. They said he was too salty." But aside from this matter of taste, "members of every clan, save his own, were regarded as strange and contemptible beings . . . not to be regarded as sharers of a common birthright. This attitude toward the stranger did not at all prevent the cannibal from being, within his own tribe, a gentle, merry, and kindly individual."

We can hardly help regretting—cannibals or no cannibals—that Frenchmen, Englishmen, and Americans ever discovered the islands and carried to them, not only Christianity, but also rum, opium, tuberculosis, and other inventions that may be associated with progress for us, but that inevitably bring tragedy and extermination to the simple, unsophisticated races of nature's children.

Why We Ought to Take Off Our Hats to the Clothes Moth

IF THE average housekeeper were sufficiently calm to examine a clothes moth before bringing the back of the brush down upon it, she would find that the occupant of the little cylinder is a tiny whitish caterpillar with a brown head, "who has woven his little shelter partly out of his own silk and partly out of the hair, silk, or wool garment he has set out to destroy," says Edward Step in his *INSECT ARTISANS AND THEIR WORK* (Dodd, Mead and Company, New York. \$2.50).

The moth is not only a skilled and industrious workman, but a mighty clever dressmaker or tailor besides, in working on its tiny suit or cloak, which is the tiny cylinder so familiar to the keen-eyed housekeeper.

As the caterpillar grows, it does not shed its coat and weave a new one, but simply "lets it out" a little at a time, by inserting a series of "gussets" (is that the right word, I wonder?). Says Mr. Step, ". . . when the further indulgence in food threatens to be-

come inconvenient (because of the tightness of the coat) the case is deliberately cut along one side from the end to the middle, and in the gap new material is woven. Then a cut is made from the other end, also to the middle, and new material inserted there. The process is repeated along the other side of the case to preserve symmetry. Result—a sufficiently roomy jacket is secured without depriving the owner of its protection whilst the alteration is being effected." Talk about shoe-repairing and clothes-pressing while you wait!

An amusing experiment was performed by one investigator who kept one of these moths, or rather caterpillars, on different colored cloths, one after another. Each patch or gusset was therefore of a different color, so that by the time the insect was full-grown he was wearing a regular "Joseph's coat" of many hues.

The Nursery Book is Old Enough to Vote!

IT SEEMS only a few years ago that at Cornell, studying horticulture under Professor Craig, we had as one textbook a copy of the ninth edition of L. H. Bailey's *NURSERY BOOK*. And here before us, fresh from the publishers, is the *NURSERY MANUAL*—the twenty-second edition of that same work, but largely rewritten and completely reset.

Notwithstanding the larger page and type, the increase from 365 to 456 pages, the addition of twelve full-page half-tone plates, and many new text illustrations, there is enough of the older book to make the new one seem familiar—perhaps it is its spirit and style. But there is also plenty in the way of additions to prove the importance of the nursery business of to-day, and to indicate what strides it has taken in the thirty years during which Dr. Bailey's book has been the standard authority.

Among these additions are the forty-three pages on Certain Elements in Nursery Practice that take the place of the original ten pages on Nursery Management; some forty-three added pages of directions concerning the propagation of different kinds of plants; a discussion of the important insect pests and diseases of nursery stock, and their control; and a general revision and freshening of every discussion in ac-

cordance with new knowledge, modern discoveries, and improved methods.

Yet it is interesting to find that Dr. Bailey realizes that the last word has yet to be learned and spoken upon many phases of the subject of plant propagation, for he says in his preface, almost wistfully, it would seem:

"When my successor shall revise this book or make a new one, it is to be expected that he will have the results of sufficient matured investigations to enable him to pronounce with confidence on many of the practices that now rest only on empirical and traditional habits." Until that time, however, we can with confidence look to this latest of fruits of Dr. Bailey's labors as a safe, accurate and comprehensive guide.

THE NURSERY-MANUAL, by L. H. Bailey. "A Complete Guide to the Multiplication of Plants." The Macmillan Company, New York. \$2.50.

Other Books We've Read

HORTICULTURE. A textbook for high and normal schools by Kary C. Davis, professor of Agriculture, Knapp School of Country Life, Nashville, Tennessee. J. B. Lippincott Company, Philadelphia. 416 pages, 287 illustrations. \$1.75. A volume in the Farm Life Text Series which combines the subjects of gardening, orcharding, small fruits, farm forestry, home and school grounds, weeds, birds, and plant life and propagation in general, with a view to making it unnecessary for high-school students to purchase any other books on any phase of horticulture.

APPLIED ECONOMIC BOTANY. Based upon actual agricultural and gardening projects. By Melville T. Cook, Rutgers College, New Jersey. J. B. Lippincott Company, Philadelphia. 261 pages, 142 illustrations. \$1.75. Another Farm Life Text Book, also designed for use in high schools with a view to equipping students to get more good and more pleasure out of the courses in botany and agriculture offered by the colleges. It covers the fundamental principles of the forms of plants, their life processes, diseases, relations and classification, and briefly describes most of the important plant families that are of economic use to man.

A Big Milk Record Doesn't Always Mean a Profitable Dairy Cow

By Peder Pederson

Dairy farmer of Black Hawk County, Iowa, "one of the livest farmers in the State," according to the experiment station men at Ames

SOMEONE once remarked that, as a rule, the most successful man is the man who has the most information.

Now I don't count myself any whale of a success, but I will say that as far as I have gone in my experience as an Iowa dairy farmer I have found that to be true.

The two things I have always wanted to be successful with were my boys and my dairy herd. So I have studied them, learned all I could about both boys and dairy herds from every possible source, and it has paid.

Therefore, if there is anything in my experience that is worth passing on to my fellow farmers and my fellow human beings, it is this:

Pick out the thing you want to be successful with, concentrate all your effort on it—and stick to it in spite of everything.

As for the most important thing I have learned about farm boys, it is perhaps the fact that if you give them a money as well as a muscle interest in the farm, an education and a fling at earning their living in town, and then offer them a partnership in farming with you, they're pretty apt to be happy and successful farmers.

As for the most important thing I have learned about dairying:

I have found that economy of production—not merely big production—is the thing to look for in a dairy cow. The heavy milker is often as much of a robber cow as the poor milker, because while she gives a lot of milk she also eats a lot more feed. Some medium milkers are good money makers because they are light feeders. Some 10,000-pound cows are losing their owners money.

Not that I would discourage anyone from seeking big production. Most big-producing cows pay big interests on their investment and a good profit on the feed they consume. My sons and I are constantly striving to get a herd of big milkers on a minimum of feed.

I have a pretty good lifetime of experience with dairy cattle behind me, but I still find things to learn. There is nothing more fascinating to me than a study of methods of breeding for the improvement of cattle, and we have found that it pays. Most men at the top in dairy cattle breeding got there in no small measure by intensive study of the subject of breeding in general, and of the families and pedigrees of your breed in particular.

I am no pedigree crank. Production is more important than pedigree, but we have found that it is surer and quicker to use pedigreed animals that have production records behind them.

I LEARNED the dairy business as a boy in the King's Agricultural Society in Denmark, where I had three years of dairying and one of horticulture. My foundation of knowledge was sound, and my practical schooling good. Denmark has long been known as a great dairy country.

I held several good jobs in the old country, and would never have needed to worry about my own future there. When the children came, however, my wife and I began to think of their future, and decided that they would have a better chance to become landowners in America. In 1891 we pulled stakes and came to the United States.

I had plenty of chances to work from the first, and served as manager on several large estates in Pennsylvania and New Jersey. One of these was the Feathered Fairies Farm in New Jersey, where we supplied the big restaurants and hotels in New York with high-class poultry products. The Waldorf-Astoria was one of our customers. I had other good offers, and was getting a good salary, but it was



Contented black and white cattle that not only have pedigrees but also produce efficiently, seen in Pederson pastures

What to Do When You Are on the Outside Looking In

DISCUSSING dairy cattle, the author of the article on this page says: "I believe it will pay any dairymen to watch closely the efficiency of his dairy herd. Even if you have but a few cows, you want to make the most of them. You want big production, but don't forget to watch the feed bills. If you don't, some of your best milkers may prove to be rather expensive. Big records will do you no good if your cash balance doesn't show up big at the end of the year.

"It doesn't matter what your breed is, or whether you are using grades. The cow that will do you the most good is the one who turns the biggest percentage of her feed into milk, and you want that milk to show up well under the Babcock test, too. In the main, I believe you will get better results with purebreds."

It's pretty hard to stand on the outside of a man and tell what he's got in him. He may look good. But is he? He may say he's good. But what does that prove? Others may think he's good. And that doesn't necessarily settle the case. The only way you can be sure about that man is to note, not how he looks, nor what he says, nor what others thin, but what he does.

Same way with a dairy cow. She may look good, have a fine pedigree, and be praised to the skies by others; but to know what she'll do, compare her feed bill with her milk record.

Many a villain wears fine clothes, and many a great man goes simply clad.

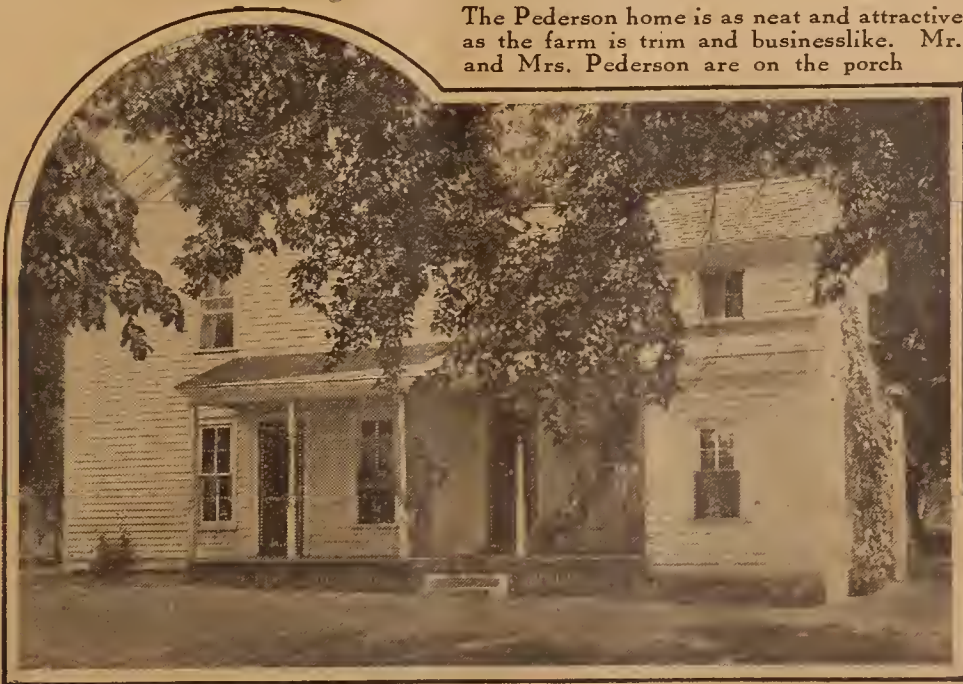
not what I wanted. My dairy knowledge was not helping me, nor was I getting any land for my boys, who were in the meantime getting the best education I could give them.

After finishing high school I sent them both to a business college, and as soon as they entered business positions I began to think of getting on a farm of my own, where I could practice my best-loved work—dairying. So we moved to Wisconsin, where I served as manager on a large dairy farm for a while, and finally, in 1907,

rented a 260-acre farm. From there I went to another farm near Racine, a smaller place of only 85 acres, but completely stocked with dairy cattle, and fully equipped. I was up against the stiff proposition of paying \$3,000 a year cash rent, but my milk checks averaged \$800 a month, and so made a go of it.

Finally I decided it was time to get the boys into the game, and to get down to real business. Jens, the oldest, had in the meantime become assistant head of the shipping department of a large typewriter

The Pederson home is as neat and attractive as the farm is trim and businesslike. Mr. and Mrs. Pederson are on the porch



works, and Gunner was head accountant at the St. Louis branch of a big plow company. Both were making good, but Gunner, the younger boy, was in poor health. I put the proposition up to them that we form a partnership and rent a farm together, with the idea of eventually buying one of our own. When I told them we ought to figure on doing it in twenty years they gasped.

"Twenty years!" they cried. "Why, Dad, aren't you pretty old to go in on a twenty-year proposition?"

I told them I might be getting along in years, but that I felt good for twenty more, and then some. After a little figuring I convinced them that we could do it. The boys gave up their jobs in town, we purchased 15 good Holsteins, and settled on a farm in Iowa. We did not buy land. We rented, and are still renters, as land is high and renting is cheaper, but our dream of a farm of our own is nearer realization every year.

We have been on this place five years. We have had bad luck at times, but have averaged a good profit every year, in spite of it.

The boys took hold of farming the same as they took to business. I don't believe it hurts any farm boy to get some business experience in town before he starts farming. He will learn a lot from contact with city business men and methods. He can learn accounting there better than anywhere else, and will know something about figuring costs. It will destroy some of his craving for city life, and make him appreciate the joys of country living. If he has the right stuff in him, and the right kind of a farm home to go back to, he will go back gladly. That has been my experience with my boys, and I don't believe they are much different from the average.

Jens has charge of the cattle. He knows more about it than I do, although I pride myself on being a pretty well-posted Holstein breed-

er. Gunner handles the hogs, general farming, and keeps the farm records. He is an expert accountant, and knows just where we stand all the time. No robber cow can fool him long.

OUR herd is young, and we have raised most of them ourselves. Of the 16 cows 55 per cent are two-year-olds, 5 per cent are three-year-olds and 40 per cent are four-year-olds or over. In 1918 our cows averaged 9,563.2 pounds of milk and 349.3 pounds of butterfat. The average feed cost was \$78.69, and the average net profit per cow was \$105.54.

What success the boys and I have earned has been chiefly through our faith in purebred Holsteins. Our greatest asset to-day is our herd. They keep the milk checks coming in every month in the year, and from our crop of calves we are able to realize a neat sum. We love our cattle, and I believe that is one of the main reasons we are successful with them. We follow certain laws of heredity, and know pretty well before a calf is born what it will be.

It takes courage and faith to make progress in breeding any kind of livestock. For instance, our young herd bull looked ready to die when we paid \$390 for him as a calf. We knew that he had the best of blood in him, and decided to take a chance. Sir Kerndyke Ormsley Piebe Mercedes No. 256,386 was about the sickest calf you ever saw when we got him at J. S. Elliot's sale, December 6, 1918. Only the skilled services of Professor Covault of Iowa Agricultural College saved him from death by pneumonia.

He was born in April, 1918, and one breeder offered \$2,500 for him when he was two months old. We would not part with him now for \$5,000, but he was considered by many a dear [CONTINUED ON PAGE 46]

Men I Know Who Use a Five-Horse Hitch— And How They Do It

By Francis R. Hazlett

THE new four-horse hitch for the gang plow which Mr. Grossboll told about in the December FARM AND FIRESIDE is without doubt better than any four-horse hitch now in common use. But Mr. Grossboll says that "pulling two plows through the black soil of the corn-belt farms is no easy job for any four horses, no matter how strong," and I think he might well have added "no matter how efficient the hitch."

I have talked with dozens of farmers throughout the corn and grain belt who are of exactly the same opinion. A majority of the farmers there have horses which do not average more than 1,350 or 1,400 pounds in weight, and such men are almost unanimous in saying that four horses are not enough when they want to plow six inches or more deep and the soil is dry and hard to turn. Some of them never use more than four horses, however, either because they have not figured out how to hitch up a five- or six-horse team or because they think such a team would be too hard to handle.

On a trip last August and September through the Corn Belt and adjoining States, I found many men who were using five horses on their gang plows. A good share of these men had worked out hitches which did away entirely with side draft, had rigged up lines and tie straps or jockey sticks with which they could control the teams all right, and were plowing five acres a day or better to a depth of at least six inches. My observations and conversations with the men whom I visited lead me to believe that in many cases a five-horse team hitched properly will cover just as much ground in a day as a six-horse team, and without overworking the horses.

If it is very hard plowing, and five horses cannot stand the gaff day after day, or if you have a sixth horse which would be idle if you did not use him on the plow, the six-horse strung-out hitch perfected by Professor White and Mr. Dinsmore may be what you want. But if five can keep the plow moving at the rate of 18 or 20 miles a day throughout the season, there is little to be gained by using six, unless you cannot find a satisfactory way to hitch and drive the five-horse team.

THE five-horse team must be hitched tandem fashion—three behind and two in front—if the horses are to have enough room to work freely, and if there is to be no side draft. However, some men hitch all five abreast, even though the horses must be crowded close together and one of them made to walk on the plowed ground.

As a young fellow in southeastern Nebraska put it, when I asked him if a tandem hitch would not be easier on his team than the abreast hitch he was using: "I guess it would be, but then I would need another man on horseback to herd the lead team." Also, it takes more ground for a strung-out team to turn on, and some men still have the mistaken idea that because the lead horses are so far away from their plow they must work harder to keep up their end of the eveners. But I am satisfied that nearly always the tandem hitch will prove the most satisfactory in the long run.

There are two general ways of making the eveners for the tandem hitch. With a right-hand plow, one way is to have the left rear horse pull against the two two-horse teams on the right. The other is to have the three wheel horses pull against the two leaders.

I remember particularly the hitch a man near Monmouth, Illinois, was using. A sketch of this hitch, together with the measurements I made of it, is shown in Fig. 1. This same hitch had been used four years, and the owner was perfectly satisfied with it. He told me he made it himself at a cost of less than \$5, and with all new material it could be duplicated today for less than \$10.

Agricultural engineers tell us that the center of draft of a 28-inch gang plow—the size this man was using—is about nine inches to the right of the shin of the left bottom, or 19 inches to the left of the edge

of the furrow left open on the previous round. To eliminate side draft the eveners must be hitched to the plow straight ahead of this center draft.

You will see from Fig. 1 that it is 27 inches from the middle of the singletree of the horse on the right to the point where the eveners are attached to the plow. When the middle of this singletree is over the middle of the furrow in which the horse walks, the point where the eveners are attached to the plow is just one inch farther to the left than the center of draft. I drove this outfit for half an hour, and could detect no side draft at all, and I think the most critical would say that the eveners was very satisfactory.

This hitch can be made in several ways slightly different from that shown in the figure. Some have a short vertical eveners in place of the pulley. Others attach the pulley so it works horizontally instead of vertically, or the pulley can be set against the end of the long eveners as shown in Fig. 2.

Some of the implement manufacturers make four-horse strung-out hitches, one of which you can use on the short end of the eveners. It is even possible to buy a ready-made five-horse hitch complete. In any case, the important thing is for all the

lengths to be such that each horse carries his share of the load, and that the line of pull coincides with the line of draft of the plow.

A young fellow in western Iowa, with a good knowledge of the principles of levers, had a very good, home-made hitch for working the three rear horses against the two forward ones.

A SKETCH of his hitch is shown in Fig. 3. Theoretically, the length of the end on which the three horses pull should be $6\frac{2}{3}$ inches instead of $6\frac{1}{2}$ inches. However, this small error throws only about one per cent more than his share of the load on each of the rear horses. As with the hitch where four horses pull against one, there are several slightly different ways of making the eveners. For instance, you may have a three-horse eveners of the type where the middle horse pulls against the two outside ones, which you could use for the rear horses.

I think that most men who are really interested in using larger teams feel that they can rig up a satisfactory five-horse tandem eveners for the plow, but a good many men say they have trouble, or did have at first, in handling the horses.

A man near Albion, Indiana, told me:

"I tried a five-horse tandem hitch on the gang plow one season, but didn't get along very well, and gave it up and went back to four abreast. The hitch itself was all right, but I had so much trouble handling the horses. The lead team wouldn't mind promptly when they were tired, the horses often got mixed up on the turns, and I couldn't use a long whip to touch up the leaders without hitting and worrying the others."

When horses are hitched a new way it takes some little time for them to learn what is expected of them, and it takes some patience on the part of the driver to teach them. But the fact that there are really a lot of men who use strung-out hitches shows that it can be done.

Fig. 4 shows an arrangement of lines which I found several men using with satisfaction, and which gives good control over every horse in the team. The lines on the lead team are the ordinary ones used for driving two horses, with extensions which reach to the seat of the plow. The bits of the rear horses are hooked together with coupling straps about 30 inches long.

Others use three checks on each of the lines to the rear horses, as shown in Fig. 5. Some men prefer the ordinary double lines on the pole team, with a jockey stick to the horse on the left. Still others use the ordinary double lines on the pole team, tie the inside ring of the bit of the horse on the left to the hame of the middle horse, and run a single line to the outside ring of his bit to pull him around with when turning to the left.

I think the final choice should depend on how the horses have been trained and driven before, and on the kind of a driver they have; and, after all, more depends on the driver than anything else. An old farmer in South Dakota, who never hitches fewer than four horses to anything except a wagon, stated it pretty well when he said to me:

"Stranger, I have never had any trouble in rigging up a set of eveners for any kind of a team I wanted to use, and as long as I drove the team myself things went along first rate, but many of the hired men I have had never seemed to be able to drive anything more complicated than four hitched abreast."

IN GENERAL, the advice of men who know how to handle big teams can be summed up somewhat as follows: Put the horses in the places where they work best. If after you have worked a day or so, one or two seem to be out of place, try some other arrangement.

Put the most willing workers in the lead, for they must set the pace.

Give the team plenty of room at the ends to turn, and let them take their time in getting around. They don't get mixed up near as much.

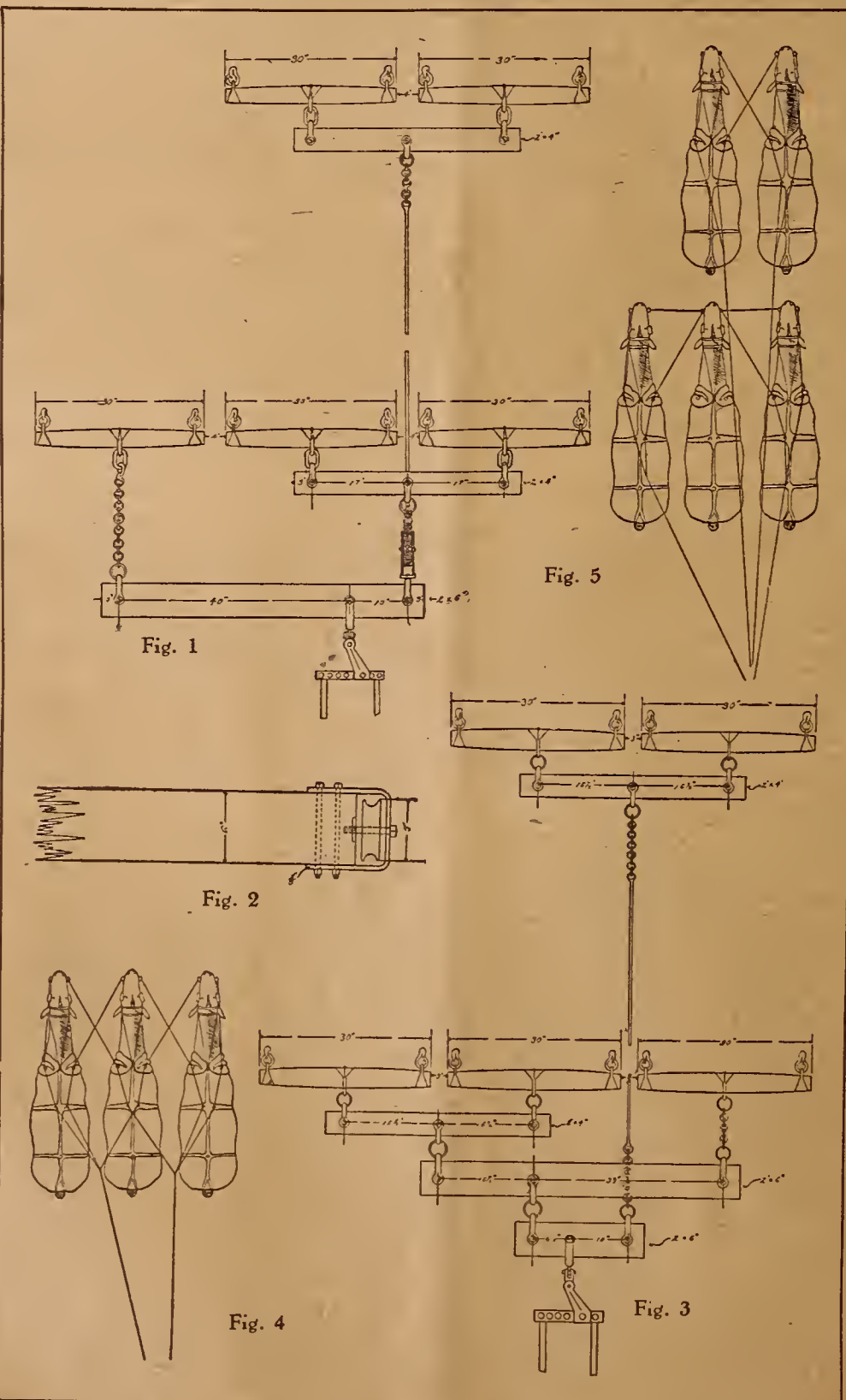
Don't use any more lines than necessary, and fasten the ends to the plow seat. Then you won't need to be afraid to use your hands to adjust the plow or ply the whip if it is necessary.

If one or two horses fall behind, don't yell, "Get up! Get up!" to the whole team. Help the tardy ones with the whip.

Above all, if the hitch is new to the team, and the driver too, give them time to become accustomed to it. Don't throw the hitch away after a half-day's trial.

India's Gigantic Rice Crop

MUCH work is being done by the Agricultural Department of India to improve the rice crop in that country. Seed is being raised on government farms, and as the result of demonstrations carried out by the agricultural departments in the villages transplantation of rice is gaining in popular favor. The Government is carrying out a very large program in developing communications and irrigations, even in remote corners of India, to combat the effect of drought on the crops. The first forecast of the area under rice in British India for 1919-20 places it at 73,250,000 acres more than last year.



If You Want Fun, Sport, and Amusement Tackle the Tricky Trout

By Warren H. Miller

Formerly Editor of Field and Stream

MAN, dear!—he's a whale! Say, he's as long as an oar!" breathed Jeff, awestruck, rising from a cautious look-see over the banks of our trout stream. As Jeff saw him first, my interest was merely academic, but I crept up to the brink and looked, too. There he lay, a long, brown shape, just discernible in the dim depths of the hemlock-shaded pool below. We retired for a council of war, and set about planning a way for his undoing. That is the cream of trout-fishing—first the stalk of pools and riffles, until one knows the lairs of the big ones; then—each a separate problem like an interesting puzzle—a feasible plan to fool the beggar and beat him at his own game with trout tackle.

How many tales of the "beeg wan" are told about the camp fire, while the sparks flicker up through the balsams, and men plan campaigns of rocks and waders, of bushments and back casts, all to outwit that smooth article, the wily trout! For "Smooth as a trout's ear" was not coined in vain. It refers to the whole critter; smooth, adroit, and wary, like the eldest oyster, he sees through most of the wiles of man, and refuses to leave his bed for any brute of a fly chucked at him thoughtlessly, or any worm heaved down to him like a morsel of meat to a setter pup.

So we sat down on the moss to plan out a way to "get" Jeff's whale. From the ledge above, where we were, was most obviously "nix." Where in the nation could you ever get down to land him, for one thing, without taking a dive into the pool, which was, Lord knows, how deep or how cold! And, with branches all about and above, where would you cast, for, of course, a rod stuck out over the bank would be as plain as a gun pointed at him to the eye of that old bird!

"He followed up that little one that I had on," whispered Jeff; "and for once I had sense enough to let him go, so that the big'un would suspect nothing. That shows he's hungry, for he intended to eat that little fellow alive—trout are cannibals, you know. He'll rise to a fly or I'm a Hebrew Jew, that's sure!"

"Wait a bit, first," said I. "Let's have a smoke."

WE LIT up, and then began cautiously to scout along the stream in the vicinity. The forest was still and quiet, with the wind sighing through the pines and hemlocks, and the gushing murmur of the stream an undertone to the occasional note of a bird. No one would be likely to come along, but still we kept a close lookout, for some boob might come wading up into our pool and spill the kettle.

About an hour later the committee met for the report of its chairman. There was a rock, it seemed, about sixty feet below "his" lair, and there were shallow spots in the stream, which, by devious routes, would enable one to gain that rock by careful wading.

Now, we knew that the old fellow could not see behind him for some thirty degrees on each side of his back fin, and an inspection of the wading route showed that all of it was within that angle. So far, so good. Neither could he see anyone standing on that rock, for a fish cannot see out of the water beyond a certain circle of some thirty feet in diameter. This is because the under surface of the water is one huge mirror, as seen from below. The trout's sight rays become more and more reflected, until, beyond thirty feet, depending on his depth, they are all reflected downward into the water again.

A man on that rock would therefore be entirely invisible to "His Nibs," although Jeff could see him.

And would he take a fly? Just then a real one came floating down-stream, flapping its wings helplessly—and he rose like a torpedo! Gosh, what a smash! He was plumb hungry, but, just the same, wasn't taking anything handed him on a clothesline. Otherwise he wouldn't have lived so long in that angler-infested water.

I noted that the insect was one of those

screamed, and his rod bent in a shining arc, as the sunlight played on the supple bamboo. He could do nothing in that savage rush but let him go—and pray!

Down the length of the pool went the line, as if attached to some submarine below, to turn and rush up past me, dancing on the strand with excitement and calling useless advice like a fool to Jeff on his rock. Up the pool he went, never tiring, like an express train, Jeff stripping in line madly, while the rod bobbed and curtsied to the strain. Then across, right under his feet, while Jeff gasped out, "Lost him! No, he's on yet—glory be!" and I bawled out, "Hold him! Keep him off that log, you gorbollied pie-eater! Keep him off!" with no more intellect than a frog and the instincts of the primal cave man possessing me. Why do we always shout the obvious at a man fighting a fish?

Could the rod hold him? It bent in a doubled, quivering arc as Jeff gave him the butt, while, tug by tug, the big fellow bored his way under the log. Once in its submerged branches, he would be free. But he swerved, and down the pool he came again.

Tired? A trout never gets tired. "I made a masterly swipe with the landing net, while Jeff cursed immeasurably as I raised him flapping and glistening in its meshes. 'I've got—' but the yell was cut short, and with a leap he flopped out into the pool again. The taut

wade, while I floundered out to be in the fray.

"Now!" gritted Jeff, doubling the rod and holding the trout's head out of water for an instant. I scapped with the net, raised a gleaming yard of fish—to see him wiggle over the brim and do a series of smashing leaps across the pool. Jeff swore as he lowered his tip and stripped in line, fast, catching it with a firm left forefinger pressed against the cork grip each time. The trout zigzagged in circles about his feet.

"Again!" he roared, and I made a swift stab, snatched at the net with half a long body in it, and made for the shore, his tail drumming wildly against my ribs! Reader, he was four pounds two ounces—twenty-two and a quarter inches long!

BUT "a four-pound trout ain't yanked out of every puddle," as Uncle David says. My luck has been mostly around eleven to eighteen inches—brownies, rainbows, native *salvelinus*, and cutthroats, for I have fished both east and west. I never saw a mountain farm country yet that did not have its trout, for our state hatcheries are on the job, and if the waters are too warm for natives they put in brownies or western rainbows, which give you just as good a fight.

And I never saw a stream so wild that neglect of the simple precautions of trout-fishing, such as keeping out of sight, remembering about the sight laws of the trout—his dorsal fin and all that—and not wading in where they are, did not leave me fishless. Conversely, planning a judicious campaign for each and every trout has usually resulted in catching him.

First stalk the stream cautiously ahead of you, to learn where they are; then plan to drop a fly there, in a natural and lifelike manner, and you'll fool 'em every time. Unlike the bass, who has a chip on his shoulder and cares not for man or devil, the trout is wary and cunning as a fox, and if he sees you or your rod it's all off.

Here is a still, silent pool, with the surface a mirror reflecting the willows above, and the flow so slow that a chip will be forever getting down it. If you walk up to that pool and stand there looking at it like a cow, some trout is sure to see you, and they'll all make for their lairs under the roots on the opposite bank. They won't be out again for half an hour. But, suppose you keep away from that pool, and cast it from the stream, over yonder pebble bar, or, if there is not room there for your backcast, from the shallows below, where your cast can snap back downstream without being hung up in a bush. Then, after enough false casts to get out line, you drop the fly on the innocent surface of that pool, where it floats down, perhaps jiggled a bit by your wrist to make it seem alive, and, my word! if you don't see a pink mouth rushing at it from nowhere in particular, there isn't a trout in it! Once he's on, wade right in after him, for he'll never get tired, and the quicker the landing net is under him the surer you are of him.

Here is a foamy, roaring cascade, with the whole brook sluicing down it. Trout here, surely! And they can't see you at all, for that water is a dense wuzzle of ripples above them. Your principal concern here is to keep your fly dry with oil, so you can see the little black speck of it in the foam, for when a trout takes it you must strike on the dot, or he will taste the hook and spit out your fly instantly.

And I once diddled a trout out of a pool that was so thickly overgrown with alders that you could neither get near it nor cast it by any art whatever. I knew there were trout there, for it was a wild Western brook, full of [CONTINUED ON PAGE 51]



Did he complain when he found his latest catch too big to go in his creel? Not so you could notice it



little yellow-green May-flies that have their brief day, hovering over the waters around four o'clock in the afternoon, and I grinned knowingly as I got out a Pale Evening Dun, tied dry, and handed it silently to Jeff. Then I began to look for likely spots to make for with the landing net, when the battle was on.

Jeff put on the little No. 12, with the fisherman's bend, showing the end of his gut leader through the eye of the fly, and then tying a simple knot in the end around the leader. Drawing this tight, he gave it a couple of yanks, to see that the fly was on for keeps; and then he started wading, his rubber boots, with the hobnailed leather sandals buckled on them, feeling their way cautiously over the slippery rocks.

I looked at the landing net in my hands. It looked tiny and inadequate—only fourteen inches across, and a foot and a half deep; one would need a deep-sea seine for this fellow! Jeff at length reached our rock and began getting out line. Like a master, he stripped and shot out more and more of it with each false cast, never once letting his fly touch the water. Back snapped the line, over the shallows of the pool, to flick through the air near me, and then shoot forward, out nearer and nearer to "his" hangout. Then, fair and true, the little Dun settled like a feather above the spot, and began to drift swiftly down over it. I held my breath.

Then—wow! There was a mighty surge, a vicious snap of a tail as broad as your hand, and a great yellow and gold body, covered with scarlet spots, glistened for a moment in the sunlight, to disappear in the green depths of the waters. Jeff's reel

We've often read of the country lad showing up the "complete angler" from the city—since seeing this picture we believe those stories are true

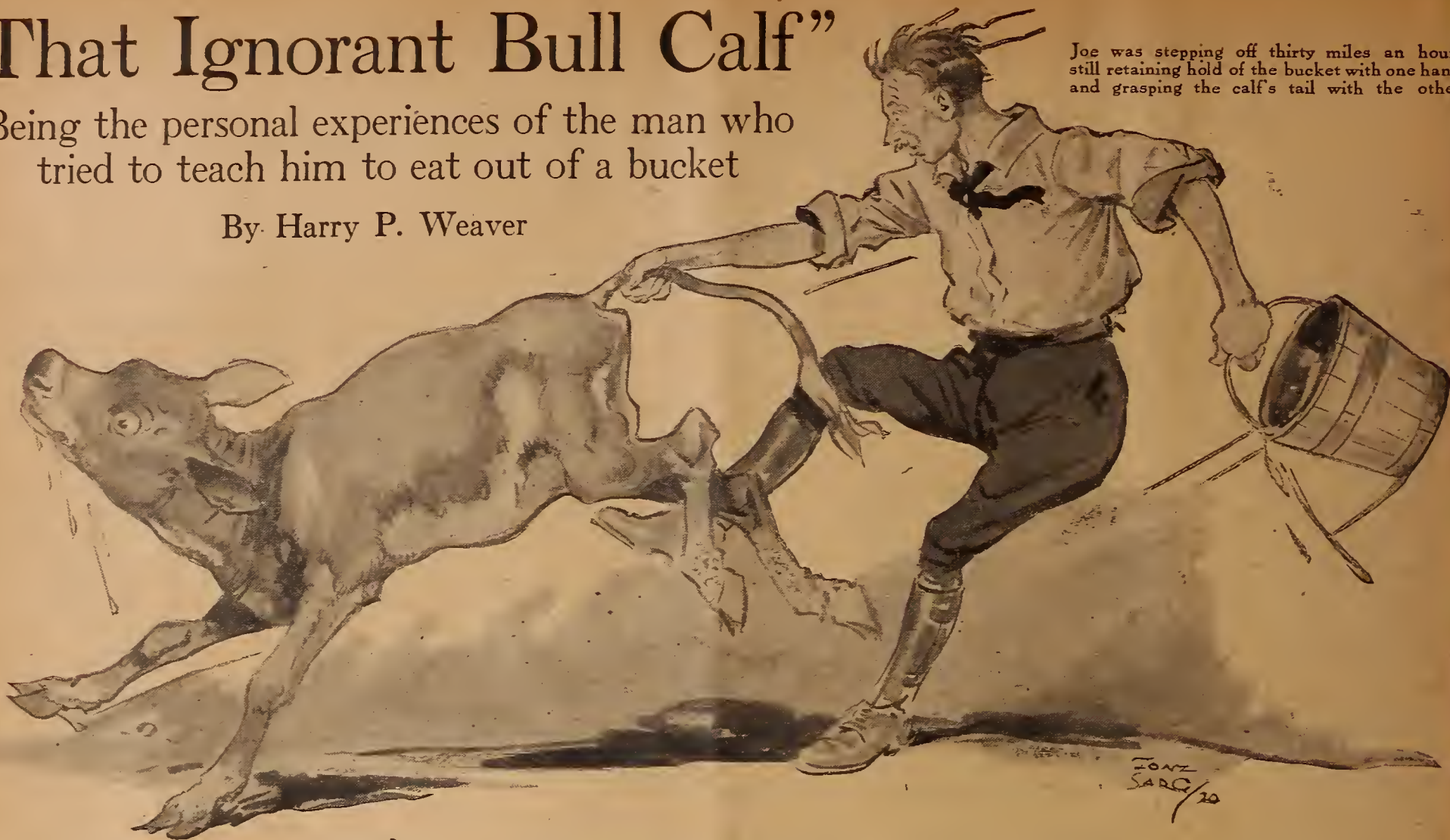


Real sport, this. The perilously perched fisherman is in the act of landing a two-pound cutthroat

"That Ignorant Bull Calf"

Being the personal experiences of the man who tried to teach him to eat out of a bucket

By Harry P. Weaver



Joe was stepping off thirty miles an hour, still retaining hold of the bucket with one hand and grasping the calf's tail with the other

I LOVE a farm. There is quiet and peace; there is health and vitality, due to unexcelled exercise; pure air to breathe, pure water to drink, good wholesome food to eat—plenty of all these. Yes, I love a farm.

But have I had experience on a farm? And do I want a job? Yes, I have had experience on a farm. No, I do not want a job. I have tried it, and "never again." I will pursue from one year's end to the next the even tenor of my way, producing Pennsylvania crude oil from the interior of the earth, and give expression to the "back to the soil" waves surging within me, by raising a quite complete, though not extensive line of vegetables for the table in my little half-acre back yard.

And so I write, not to discourage farming; and recount my failures, not to influence the world to suspend agriculture; and air my past year's experience, not to dampen the ardor of stock raisers, but to show what a fool a man can make of himself.

I firmly believe that stock-raising, along any line, if properly managed, will prove profitable. But to raise stock, one must have stock; and to make it profitable, one must keep his stock at least alive. In none of these requirements will I ever again attempt to qualify.

Joe—whose other name doesn't matter—and I were early attacked by the farm fever last year. The year before we were so busily occupied making maple sirup that our attentions did not run so much along farming lines, though the sirup season ended in plenty of time. However, much work on the oil lease, or something else, served to tide us over the critical stage, and we entered the summer encumbered with no more than a small garden each.

But not so last summer; the call of the soil took an early and firm hold upon us—and we planned a farm, a stock farm, if you please, stocked with Holsteins, pure-blood Holsteins. We talked it, we dreamed it, we lived it—in prospect. In imagination we walked down sunny lanes, and counted numbers of the spotted pure-bloods grazing in sunny fields. Joe is endowed with a strong imagination, and these pictures were almost real to him. I enjoyed his graphic illusions.

About that time a male calf was given to me. He wasn't a Holstein, but I reflected that a calf was a calf, and a start, though not of the best, and might be utilized in a trade, possibly, and thus be turned into the real thing in the course of time.

Feeling that a fifty-fifty course from the first would prove expedient, Joe offered me \$5 for a half interest in the calf, which I, believing a sense of envy might accelerate progress and facilitate a second purchase elsewhere, thus assuring the firm of at least two calves, refused.

This refusal proved a strong test on Joe's faith. He felt that I was double-crossing him in some manner—trying to "let him out" or something—and vociferously accused me of graft, selfishness, and infidelity. But I was firm, refusing positively to sell, insisting sternly that one calf was but half a start, and that a whole integral start toward stock-raising required at least two calves. I argued that I had provided the company with one, and that his stunt, as part owner and stockholder, was to provide another.

The most serious experience in retrospect loses its somber shade. As I look back on the distressing experiences I endured in weaning that calf, I am amused. He was a hard calf to teach to eat. He didn't seem sufficiently endowed, mentally, to know enough to eat. This doesn't seem possible, but it is true, and though he caused me great distress of mind, and a great development of the virtue of patience, I had yet to know or to learn what it really meant to teach to feed, from a bucket, a hard-headed, ignorant bull calf. This I experienced and endured when Joe bought his.

Joe's calf wasn't a Holstein either, but he was big. We had been apprized that the current value of calves of a few weeks' age was that of the market value of their hides, which, at that time, was about \$2.50. Joe had seen and liked this husky, and offered and paid \$7 cash for him, and had it sent to my home and placed in my tender care.

My reason for assuming the responsibility of that calf's future was in exchange for Joe's services in caring for our rabbitry. Yes, we had gone in for rabbits too. There is money in rabbits. Nearly everyone who has ever raised rabbits will tell you so.

BUT to return to Joe's calf: As long as I live, Joe's bull calf will represent to my mind the acme or ne plus ultra of all that is dumb, obstinate, obtruse, ignorant, or vile. That calf, so far as my experience goes, lived, walked, bleated, reared, bucked, and had his being in a class all by himself. He was large, as I have told—much larger than mine, though a month younger. And he was strong as a young grizzly.

I have worked hard, battling with the belligerent realities of life, through my short span of years, and I will say, without hesitation, that that calf of Joe's, and its instruction relative to receiving nourishment, has constituted my most knotty problem. I question in my own mind whether I would accept a similar responsibility for a hundred dollars. If an ability to rear, to buck, to bleat, or other such things are to be regarded as qualifications, then that calf was accomplished at birth in all the arts of the bovine plane of existence.

I despaired, at length, of ever attaining

success, in any measure, in teaching the animal to drink, and as a last resort determined to starve him to it. Accordingly, he was deprived of his "calf meal" for two days, and on the morning of the third tried and tempted with a nice bucketful. Fortunately, Joe was present that morning, and at my insistence agreed to feed the critter or kill him. He took the pail and entered the corral, determined, doubtless, to teach me a lesson in mildness, patience, and the gentle art of feeding bull calves.

THE results of Joe's endeavors will always remain vividly with me. Joe is six feet tall, given to lankiness, and about as graceful as the bird they call the elephant. The sight of the feed bucket and the smell of warm meal slop put a terrific pressure of "pep" into that calf's frame. He made a wild rush for his eats, struck the pail a glancing blow, which spilled a large portion of the contents on the legs and feet of his would-be benefactor, and ended the rush with his head between Joe's legs, still charging mildly, with Joe discussing the situation in no unmistakable language, holding the pail aloft with one hand, in an endeavor to save the remainder of its contents, and hopping convulsively on one leg in an effort to save himself from falling.

The following few minutes were replete with terrific excitement for both Joe and his calf. First it appeared that one was down, and then the other. I am convinced that there were moments in which Joe was stepping off thirty miles an hour, still retaining hold of the bucket with one hand, and grasping with a death clutch the calf's tail with the other. After a time, however, Joe succeeded in getting the pail over the calf's head, and held it there with the determination of unbridled fury, rushing the calf backward to prevent it from withdrawing its head from the pail. This process continued for a moment, when Joe, suddenly esteeming prudence the better part of valor, just as suddenly withdrew the attack, and climbed ponderously but rapidly over the fence.

This was doubtless a wise move, but he made the mistake of retaining hold of the pail; for by this time the calf had conceived the idea that the pail contained the feed, something, apparently, he had not thought of before, and, with the deftness of a horse accustomed to steeple-chasing, he jumped the fence in pursuit. This was a surprise to me, although the fence was a low two-railed affair.

This action aroused Joe's fighting blood to the limit. With terrific force he brought the pail down over the calf's head, which accomplished nothing save to put a large dent in the pail, then seized the animal about the body with both arms, lifted him from the ground, and threw him bodily over the top rail into the yard again. If, as

Joe claims, he succeeded in getting any feed down the calf, the calf surely is entitled to the counter claim that he smeared a no small amount on his master, for Joe surely presented a sorry appearance when the affair was over.

After this, progress was made more rapidly in the calf's education, owing to the fact that the creature's mental faculties had developed to the extent of a comprehension that the office of a feed bucket is to contain feed, and that the only logical and practical method of obtaining the bucket's contents is to insert the head into the pail, and that really better progress in so doing may be made without the use of the hoof than with it. However, he continued to exercise his bucking tendencies to the end.

The end came within a month of the above narrated incident. He became ill, and, after a short season of misery, died, though I tried earnestly to save him, for he was certainly a promising calf, and was game to the bone. I then tried to sell Joe a half interest in my calf, but he refused to purchase stock, for he felt that what with the original purchase price of his calf, in addition to what he had invested in milk and feed, he had lost heavily, and that the game was a losing one at its best, and that he had lost all he could afford to lose.

THUS, with the death of Joe's calf, the company as a stock-raising enterprise terminated its existence.

I continued to feed and water and care for my own calf during the summer, with the view of providing myself with a fine piece of beef this winter. With the advent of the autumn I began feeding heavily, but all, seemingly, with no profitable results; for it seemed impossible to fatten that calf, and the great quantities of expensive hay, oats, midds, and meal which he absorbed seemed only to enter into the manufacture of bone and rind.

Finally, in December, I sold him for \$10. I felt afterward that by insisting firmly on a larger price I would have received more, and berated myself for an easy mark, and was disposed to become despondent; but time heals all wounds, and the reflection that it was worth at least \$10 more to get rid of him, and be thus relieved of a continuation of his care, served measurably to assuage my bitterness.

Joe laughed long and loud when I reluctantly told him of the sale, and expressed his satisfaction that his calf died when he did. He still maintains that the only profitable turn of the wheel during the entire summer's labors was the untimely death of his calf.

The wheels of big business run smoothly because the work is systematized and planned. In like manner the business farmer systematizes and plans his work.

Why the Factory is Taking Farm Labor— And What You Can Do to Stop It

By William H. Barr

President of the National Founders' Association

I AM both a farmer and a manufacturer, interested in the problems which confront both industries. Because of this, FARM AND FIRESIDE has invited me to discuss the shortage of labor in its relation to the farmer and the manufacturing industries, which, the farmer complains, is luring farm labor away from him with high wages, shorter hours, and easier work.

I am asked to give you, in short, the manufacturer's side of the story, and see if there isn't a common ground on which farmers and manufacturers can meet and work out a solution. I think there is.

Be assured that manufacturers are not taking farm labor because of any desire to cripple agriculture. The simple fact is that our national source of labor supply, the immigrants, having been cut off by the war during the last four years, has left us 4,000,000 hands short. In addition, not only is that shortage not being made up by immigration from Europe since the armistice, but those immigrants who are already here are leaving the country in large numbers.

This situation, you can readily see, strips us of help. We must secure labor from somewhere. And naturally, as our industries are bidding against each other for what labor there is, wages go skyward and your labor is attracted to our offers.

To thus cripple agriculture is a thing that will in the long run react against industry. It is as bad for us as it is for you, but for the moment we can't help it, though we are working very hard to correct it by getting the flow of the right kind of immigrants re-established, so that we can use them in industry, and thus relieve the cityward pressure on your natural supply of native farm labor.

THAT is the situation in a nutshell. As to your personal interest in helping us solve it, I think there can be no doubt. As to what you can do, I shall not assume to advise; but we in industry would be very glad to see some of your organizations, such as the American Farm Bureau Federation, the National Grange, and others, get together with us behind the right kind of selective immigration program. As to what that program might be, I shall say more later.

Now let's look at the situation a little more in detail:

You are paying the highest wages in the history of American farming, you say, and yet your farmhands, perhaps even members of your family, are forsaking the farm for the cities.

The United States Department of Agriculture bears you out in this, when in a recent statement it said:

"Serious risk of reduced food production this year because of high wages demanded by farm laborers, high cost of farm equipment and supplies, and because of pronounced movements of people from the farms to the cities is indicated by reports and letters that are reaching the United States Department of Agriculture from many sections of the country.

"The most definite of these reports come from New York State, where records of the population on 3,775 representative farms on February 1st this year and February 1st a year ago were made by federal and state workers. It was disclosed that during the past year the number of people on these farms decreased nearly three per cent, and the number of hired men decreased more than 17 per cent. If the same ratio holds for all farms in the State, about 35,000 men and boys left farming to go into other industries, while only about 11,000 have changed from other industries to farming. This is a more rapid movement from the farms to other industries

than took place in the early part of the war.

"The same conditions in varying degrees exist in all sections, according to the Federal Bureau of Crop Estimates, although they are not so acute farther from industrial centers.

"Another New York report, applicable in some degree in every part of the country, is that farm wages this year will average 14 per cent higher than they were in 1919, although in 1919 they were 80 per cent

toward a shorter working day and a decreased output."

Any business man employing labor on a large scale will understand that a large part of this movement from the farm is due in large part to the shortage of immigrant labor, which has boosted wages in the cities to an unprecedented level.

Factories, railways, and other enterprises of the city are employing more young men and young women from the

Who Mr. Barr Is

MR. BARR is especially qualified to discuss the problems of the farmer, for, in addition to being president of the National Founders' Association and president of the Lumen Bearing Company, one of the largest plants of its kind in the country, he owns and manages a 300-acre farm of his own in western New York, and lives on it.

Barr exemplifies the type of man who makes good through hard work and common sense. He is not a college product, although experience has given him better than a college education. At fifteen he learned the trade of leather belt maker, and worked at it for three years. Then he started selling belting, spending



William H. Barr

much of his time in the northwestern part of Pennsylvania, in and around Austin, getting orders from the lumber mills in the days of the hemlock lumber boom.

He entered the Lumen Bearing Company works at the age of twenty-three, working his way up gradually to the top. He has since become

a recognized authority on industrial questions, such as labor, immigration, and related subjects, and is spokesman on these questions for the foundry interests of the country.

In this article he seeks to present the facts about the labor situation as he sees them, and then leaves you to do your own thinking. THE EDITOR.

higher than they were at the beginning of the war. Estimates from 350 farmers in all parts of New York State indicate that experienced farm help, hired by the month, will be paid this year about \$52 a month and board, as compared with \$45.50 last year. Experienced married men, not boarded, but provided with a house and farm products, are expected to receive on the average about \$68.50 a month in cash as compared with \$60 last year.

"Numerous letters to the Department of Agriculture from its field workers or from farmers indicate a wide-spread disposition to cut down plantings so that the work of cultivating can be attended to by the farmer himself or by members of his family. The assertion that farmers cannot pay the high wages demanded in competition with other industries, and make a profit on their products, is frequently made. Many farmers, also, declare it is unfair to them to be under the necessity of working ten, twelve, or more hours a day when the tendency in other industries is

farming districts than has been customary in the past. Higher wages, easier work, and shorter hours are the lure.

The shortage of labor in our industries in the cities throughout the country has reached an acute stage. Delegates attending a convention of the National Association of Employment Managers, in New York, reported high wages everywhere, and more jobs than workers to fill them. It is said there is at least a job and a half for every man who wants a job. Detroit alone, it is stated, could absorb 10,000 more unskilled workers, paying highest rates of wages for good men.

Railroads are having difficulty maintaining their roads because of the lack of men in some departments. Railway cars are lying on sidings because men cannot be found to repair them. The dearth of rolling stock for the movement of farm products, because of these idle cars, has been great, and farmers have petitioned Washington for more cars to meet farming needs.

Contributing to this labor shortage is the new basis of employment in many industrial organizations, resulting from the slackening of the productive effort of individual workmen. It is reported that 100 to 110 men or more are now required to do the work that 60 men used to do, to such an extent has individual production fallen off. Employers are looking for additional workers to make up this deficiency.

An analysis of the classified "want ad" section of one of the leading New York newspapers tells a tale that is typical of many large cities. On November 2, 1911—before the war and when employment was on a normal basis—that newspaper carried 38 columns of male and female "help wanted" ads. On October 27, 1919, the same newspaper had 126 columns of male and female "help wanted" advertisements.

Is it any wonder, therefore, that many men and women are leaving the farms to try their fortune in the city where employers are offering higher wages than were ever known before? And does it cause any great surprise that so many of the young men who left the farm to go into the army decided to remain in the cities after being mustered out of the service?

Not only is the shortage of labor in the cities responsible for that state of affairs, but it is responsible also for the unprecedented rise in virtually all of the commodities which the farmer has to buy. The farmer is certainly feeling the pinch of high prices. He is buying metal products at an increase of 186 per cent. Clothing has increased 243 per cent, and lumber, 197 per cent. Everything that he buys in the way of manufactured articles has nearly doubled in price. And why?

Simply because employers are compelled to bid high money for help. During 1919, employers, it is estimated, spent more than \$30,000,000 in "help wanted" advertisements. This is perhaps the smallest item in manufacturing expense, but the added cost they paid for their labor and for raw products are necessarily included with other operating expenses, and the selling price has to be advanced accordingly to provide a margin of profit.

TAKE shoes, for example: The hide goes to the tanneries for the packers, who are paying substantially more for labor than before the war. Accordingly, the hide is sold to the tanners at a higher price. The increased cost of labor makes tanning a more expensive process, and the tanneries raise the price to the manufacturers of shoes. Here the same conditions prevail, and the shoes go to the dealer, who tacks on an additional figure in order to cover the increases in wages to his salesmen and other employees. All of these increases come back to the consumer—and farmers are consumers.

If one were to ask me what is most responsible for this condition, I would unhesitatingly answer that one of the greatest causes is the lack of immigration during the war and the dwindled immigration after the war, as contrasted with pre-war figures. In the case of the tanneries I have just mentioned, 67 per cent of all the employees are foreign-born, and in the packing industry, 61 per cent. Consider some of the other important industries dependent largely on foreign-born labor: Sixty-two per cent of the workers in the bituminous coal mines are men who came here as immigrants. In the steel and iron industries, 58 per cent are foreign-born; in the clothing factories, 72 per cent; cotton goods manufactories, 69 per cent; woolen and worsted manufactories, 62 per cent; sugar refineries and railway maintenance gangs, 50 per cent.

The shortage of foreign-born workmen in this country is more than 4,000,000; in other words, 4,000,000 is approximately the number of immigrant workmen the war kept from coming to this country. From 1911 to 1914, 5,174,000 immigrants were admitted to the United States. In the five years following that four-year period, the United States received 1,172,000. Not only is that true, but it is a fact that the immigration [CONTINUED ON PAGE 48]



My Boyhood on a Middle-West Farm in the Days of Long Ago

By A. W. Beale

Illustration by William Berger

Part Three

THOSE winters of '56, '57, and '58 that we lived in Adair County, Iowa, were the coldest I have ever known. The writer of an Iowa history says the winter of 1856-57 was the longest and coldest on record for Iowa.

Like the thoughtlessness of a boy, I was not making observations for the future, and took no records of temperature, and do not know what depths a thermometer would have shown, but I know that those winters were very long and cold. They came early and stayed late, as unwelcome visitors sometimes do. There must have been much suffering by the stock, for pigs and calves and poultry were frozen to death. The snow-fall was heavy.

The last day of November of the year 1856 there was a fall of at least one foot. How many more there were during the winter I have no record, but there was no thaw until the next March, so all that had fallen remained. As the snow receded in the spring, it was found that the winter roads had passed over fences and across gullies without any regard to where the travel had been before.

From our house to the stable was a big drift through which we boys tumbled in great glee for a passage to and fro. I think this was the coldest winter of the three that we lived there, though I don't think it was the one in which the ox acquired his pot-hook tail and his crumple horn.

But this first long winter came to an end, and spring was at hand. The rains and the warming sun melted the snows, and they disappeared. And then the wild geese, the brants, the cranes, and the ducks, on their annual spring migration northward, came in full flock and dropped down on the prairies and fields and into the swollen creeks, to rest and feed on the tender grasses and grains just springing up.

IHAD seen all these winged creatures flying over in Indiana, but never in such numbers as here. I suppose migrants learn to take a line of flight fraught with the least danger when they pass over, and when they settle down to feed and rest.

Of bright and sunny days they were to be seen only in small numbers of mornings and evenings, and usually flying high in going over; but on dull and cloudy days, the whole day long, they were flying low or dropping down in the fields in great numbers.

Geese, cranes, and brant are very watchful. When a flock is feeding it is always well away from anything or any place that could give shelter to an enemy, and guards or sentinels are always on watch. A goose, and particularly a crane with its long legs and neck, stands up well above the ground, giving it a chance to see far around, and its keen vision quickly detects any sign of danger. Therefore, to stalk them and get within gunshot is no easy task.

Of course, with only our rifles, stalking was the only way to get them. Notwithstanding their numbers, and the many times I tried to get geese, I never succeeded but once in getting one, and once a

crane. The flock of geese out of which I got this one was feeding on a wheat field, and had, unconsciously, I suppose, wandered toward the fence, which ran close to a little creek, giving me a fine opportunity to creep up to the fence from the creek. The shot was an easy one, and it was a very proud boy that carried his first wild goose home to his mother.

The crane I got was the sentinel of the flock. The bunch was in an open field, and some distance from the head of a shallow gully, where stood a small tree. I laboriously crawled up this shallow gully—no

was running considerable water, and many ducks were coming in. It was one of the first few times I had been out with a gun alone. Peeping over the creek bank, I saw the duck a short distance away, on the further side. Scarcely able to control the duck-ague I fired, and broke a wing. On seeing it fluttering and splashing as if unable to fly away, and yet fearful that it might, I dropped the gun and plunged into and across the stream and fell bodily upon the poor thing as if to make doubly sure of its capture. I was!

There have been many comets visible to the naked eye, some glowing ones since this one of 1858, but a learned man, whose book I have recently read, says this comet is conceded to have been the most beautiful on record.

Astronomers tell us that this comet will not again be seen for two thousand years, assuming that its last previous appearance was in the year 146 B. C. If this be true, any boys now living need not stay up of nights awaiting its return.

Another sight during those cold winter mornings that I have seldom seen since was that of "sun-dogs," or false suns. These were always two in number, appearing close by on each side of the sun, at about sunrise, and of considerable brilliance and perhaps an hour's duration. Their appearance was only on very cold mornings. I have read several books on the weather, astronomy, and marvels of nature to learn what I could of the nature, composition, or cause of sun dogs, but in none of them could I find any mention of these accompaniments of the sun. I would suggest, however, that they may have been produced by some peculiar condition of the atmosphere induced by extreme cold when acted upon by the sun's rays.

Now you know as much about them as I do.

It was after we had moved to the county seat, some time during our last year in Iowa, that we were favored with the view of a mirage. A mirage is usually a distorted vision of something that is not, that you see in the distance, as of a landscape, a lake, or a caravan, and usually inverted—turned upside down. But this mirage was of a landscape that was there. To the south of the little town some two miles away was a settlement in the valley of a small stream, consisting of several farms with necessary dwellings, barns or stables, etc., but all entirely out of sight from town. One morning about sunrise this whole valley, with its farms and houses, was up-raised to a level with the surrounding country, and was plainly in view. We could even see the people going about their usual morning chores. Instead of being upside down or in any way distorted, it was on a natural and orderly level, as if always thus. In the course of an hour or less the vision had disappeared, the landscape had fallen back out of view.

While living at Fontanelle, Father loaned me, or hired me out, one spring to a farmer living four or five miles out of town, who had a number of acres of prairie sod to break up and wanted a driver for his three yoke of oxen while he managed the plow. It was with some fear that I commenced my job. The man was a stranger to me, the oxen didn't know me nor I them, and I had never before driven three yoke, and I soon found out that I wasn't any ox driver anyway. I couldn't seem to use the big, long whip and hit where I wanted to. Like as not, I would get the lash around my neck or shoulders when I wanted to hit an ox. With our beloved home team we never used a whip; the spoken word was all that was needed. But the farmer was patient, and by and by we got the breaking done.

Then we planted it to corn by chopping it in—taking an ax and striking the blade in the turned-up [CONTINUED ON PAGE 47]



After Nig's battle with the skunk he was not a fit companion for a week, and to the women of the house he was very much persona non grata.

easy matter, for I had the heavy rifle with me. The little tree came handy as a rest for my big gun. When I raised my head and shoulders sufficiently to get a draw on the crane, I saw I was in plain sight, and it was about to take flight as I pulled the trigger. The shot was true to the mark, and I got my crane. But he wasn't fit to eat, at least I never heard of anyone eating cranes, though I have since heard of politicians eating crow.

In passing over on their migrations, crane usually flew higher than geese or brants. Sometimes they were so high that they appeared no larger than swallows.

Neither geese nor cranes seem to be as plentiful now as they were in those days. Same old reason, I presume—too many killers and not enough protection. I read a magazine article not many years ago in regard to their killing in California because of their destructiveness to wheat fields. Hunters by the score would go out and dig pits or make blinds from which to shoot, and slaughtered the birds by the wagon-load, many being left where they fell because the market for geese became glutted and there was no sale. But the excuse that they were damaging grain did not hold good when the killers dug their pits between lakes to catch them when they flew over from one lake to another. And though geese fed a great deal on the wheat fields of Iowa, I never knew that they lessened the crop any. A little pasturage didn't seem to hurt the wheat.

I think my first kill of any kind in the game line was a duck, a fine mallard. It was in the spring of the year, and the creek

was a very wet boy, but a fine duck was my compensation.

It was during the time we lived on the farm on Middle River, but I do not remember the time of the year, that an elk wandered into this body of timber in which the pigeons had rested. Where it came from I do not know, as elk must have departed from the State long before. It was probably alone, wandered from the Great Northwest somewhere. It was discovered, and all the settlers of the neighborhood entered upon a chase with dog and gun. I suppose their only thought was for some fresh elk meat. After quite a chase back and forth through the grove, it was finally shot and killed. But what a disappointment! It was quite lean, and its meat proved very tough eating. How much finer it would have been to capture the poor thing alive and given it a good feed of hay.

IT WAS in the fall of 1858 that that magnificent spectacle, Donati's comet, was presented to the public. It was a piece of great fortune the people of that day enjoyed of having lived at a time of such cometary display. The head, or nucleus, was to the west and north, and the tail extended to the southwest almost to the horizon. The period of its greatest splendor, when it was nearest the earth, but still millions of miles away, was the latter part of September and the first half of October, though it continued a beautiful object for some weeks afterwards, finally diminishing and fading away.

Forage Crops Find a Place on My Farm Because They Pay

By John H. Voorhees

THIS is the story of my experiences with forage crops and why I believe in them. I have noticed that forage crops are not so generally grown as I believe could be profitably done, and if I can "sell" you the idea with the facts of what they have done for me I will consider it greatly worth while.

It is true that putting down forage crops takes labor, and at a busy season, but I find that more than made up for in the acreage they release for the production of good-paying crops.

There are other advantages, too, which I will set down toward the end of this article.

Forage crops were a great thing on our dairy and general farm when I was a boy. When I grew up I went away, and college with its studies, athletics, and various activities came along, then two years in the metropolis, and two years' work at the New Jersey Agricultural Experiment Station before I attempted farming myself as the manager of a large farm in northern New Jersey. I had grown away from the practices of the old farm.

My father had died and my mother had moved away, but I had not forgotten the principles of dairy feeding. Conditions had changed. My pastures were run down, and there was only a small field of alfalfa of questionable value. Labor was \$50 and \$60 a month with perquisites. It was necessary to use adaptations of the soiling crop system to supplement these pastures, and to tide me over while I was putting down two pastures mentioned in a previous article. It was a difficult problem.

I included in my plans the use of some wheat grown in rotation, a 12-acre field of oats and Canada field peas, which I desired to grow to fit the ground for alfalfa, and which I felt might in large measure be cured for hay, some alfalfa, an acre of soy beans, an acre of millet, and sufficient corn from the rotation to fill out the balance of the season.

THE average production of these crops in green feed was slightly more than nine tons to the acre, and I managed the feeding of the herd, and sheep too, only with some difficulties. For one thing, I had failed to provide any late fall forage. This made it necessary to begin feeding silage almost immediately after filling. As a consequence I was compelled to turn my cows out on pasture early the next spring.

Incidentally I might mention the oats and peas. After feeding them green for three or four weeks, there was about eight acres of them left. These I cut for hay. It was on Saturday. Just as the job was completed it began to rain, and it rained every day for a week, and I worried every day for a week.

When it cleared off I allowed them to dry thoroughly, put them up into cocks, let them stand two days, then turned over the cocks, and hauled the hay to the barn. The hay was bleached white. I suppose much of their food value was destroyed, because we know that corn stover left in the field until January or February loses about one half its food value, and this case was similar in nature.

The cows, horses, and sheep relished the hay, and I felt less badly about my misfortune, especially when feeding

proved their great value. I soon found I was well repaid for my effort. There was an aftermath also. The rain started a second growth of peas which furnished considerable extra forage, or pasture really. This second crop should have been plowed down "for the land's sake." But human nature was too strong, and I pastured it. Anyhow, the field worked up splendidly for plant-

pastures consisting of eight and seventeen acres respectively. Thus, with two good fields of alfalfa, newly planted, I felt much easier. But I did not abandon the use of forage crops to supplement the pastures.

I planned to use some wheat grown in rotation, some of the first cutting of alfalfa, and then some oats and peas planted for this purpose. These crops provided inter-

me to maintain my pastures in a much higher state of production. Fewer acres of land were required to feed the animals, and those released were devoted to crops of higher market value.

As a part of the regulation farm rotation I grew silage corn. There is a distinction between silage corn and husking corn which is very important in climates where the growing season is limited. Silage corn and husking corn may be the same in the South, but in the North husking corn is of a variety that matures every year, and silage corn is one that merely comes to the denting or glazing stage, as the case may be, by silo-filling time.

The first year my crop, though not a complete failure, was nothing to boast about. It turned out to be a variety that little more than silked when frost hit it. There was so much water in it that by the time the silo had been filled, and refilled, water or the juices of the corn began to run out of the bottom of the silo onto the cement floor of the dairy barn. The next year I secured a variety of Leaming which was better, but it was fully five years before I located a strain of this variety which exactly "filled the bill." This strain utilized every day of the growing season, and nicely dented by silo-filling time.

The same difficulty was encountered in locating a variety of soy beans to grow with the corn. Finally, I settled on Medium Green rather half-heartedly. My experience with soy beans is that they are bothersome in corn. It is my opinion that larger yields of each may be secured when they are grown separately and mixed by running one load of soy beans with every two or three loads of corn into the silo.

IHAVE never been able to note any appreciable increase in the yield of corn, or any improvement of the soil, when they were grown with corn. Of course, there should be, because the corn should benefit from the nitrogen stored on the roots of the soy beans. In mixtures of oats and peas this fact is very noticeable. Somehow, I have to be able to see comparisons before putting them into operation. It would seem that the eye of a good observer distinguishes practicability and profit, to a large extent, in farming, and differences capable of being recorded by a scale only are seldom practicable.

This practical experience with silage proved to me that:

Soy beans increase the percentage of protein.

A variety of corn which dents or glazes produces more dry matter on a given area.

There is less green weight to handle.

There is less [CONTINUED ON PAGE 45]

Hard Times—and the Farmer

ARE food prices coming down to the pre-war level while everything else continues to soar? Are manufacturers to be allowed to base their prices on cost of production, while the farmer sells for what he can get? Will city people continue to expect farmers to give them food at low prices because they think that "things that just grow don't cost anything"? And will economists and business men cling to the belief that the reduction of prices will automatically force enough farmers out of business to turn the tide the other way?

That prices for farm products are coming down has already been demonstrated. How low they will go nobody can say, but the world scarcity of food probably will prevent a decline to pre-war levels. One big way for the farmer to benefit himself, and at the same time serve the consumer, is to strive to reduce the machinery which carries the food from the farm to the ultimate user. Co-operative marketing associations can do a lot, individual marketing direct to the city home by means of parcel post and express will help too. There is hardly any limit to the possibilities of direct marketing if the right sort of co-operative spirit can be induced. If there is the will to succeed, the way and the means can be worked out.

There seems to be a greater feeling of understanding among city people of the farmer's problems than ever before. And the American Farm Bureau Federation and other farm organizations are doing, and can still do, much good with their campaign of education and publicity to show city people just what the farmer's problems are. The city man is businesslike. Talk income on investment and cost of production to him and he will soon see the light.

THE EDITOR.

ing the alfalfa.

It is my opinion that oats and peas properly cured make an excellent food, because they are high in protein. However, a great deal depends upon the mixture used. I used equal parts of each, whereas it is a common practice in New York, and other short-seasoned localities where they grow particularly well, to use seven pecks of oats, three of barley, and one of peas.

This same year I put down two good

mittent relief for the pastures during spring and early summer. Late summer and fall were more difficult to provide for, but I managed to pull through the rest of the year with a small area of soy beans, some cowpeas, some millet, and finally some corn from the regular rotation.

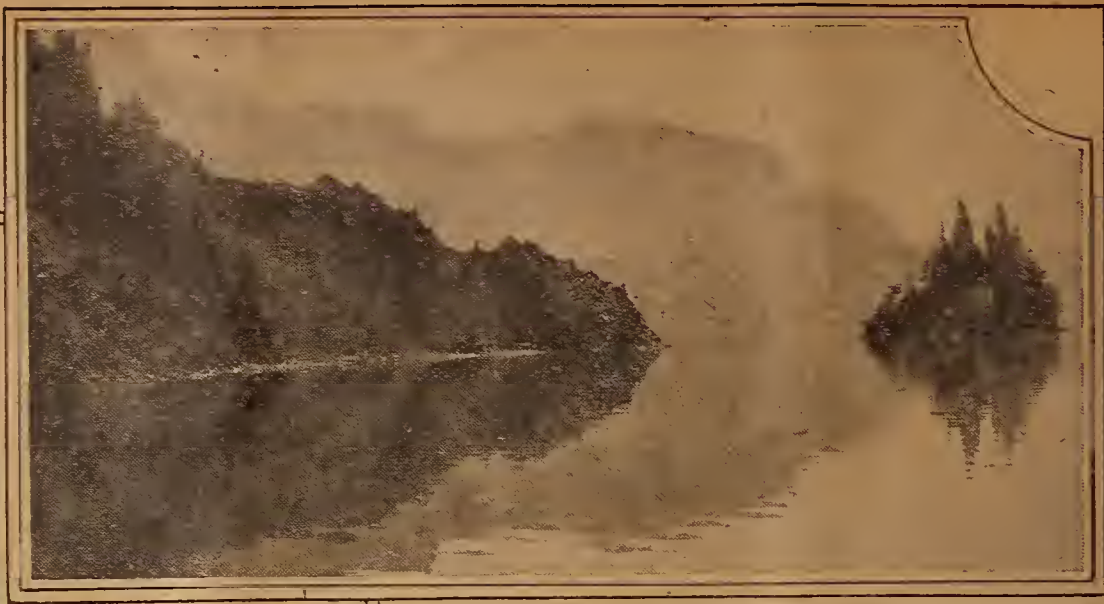
It is my experience that even a few of these crops are in themselves rather costly on account of the labor required and the inconvenience necessary during the busy seasons. However, this method enabled

The S. Tomkin House, built in 1676, rebuilt in 1819, now owned by J. C. Heritage, Michletton, New Jersey. Alfalfa in foreground. This is not unlike the old home place where Mr. Voorhees had his experience with forage crops



Crater Lake, in southern Oregon, is the deepest and bluest lake in the world. Phantom Ship, near the shores of the Palisades, is a mass of time-carved lava, so called because when seen at a distance it suggests a ship under full sail, and in certain slants of light suddenly disappears

Photo by H. T. Cowling



Looking down into Swiftcurrent Valley from the Garden Wall, Glacier National Park. From this point one can see seven lakes, each connected with the other by a narrow, thread-like stream, while on beyond, through the pass, carved by the mad Swiftcurrent River, lies the more level stretches of the land in the Blackfoot Indian Reservation. Bordering the distant horizon, the purple haze of the Sweetgrass Hill blends into lighter blue of the sky. In reaching the Garden from Many Glaciers Hotel, one must traverse twenty-seven Switchbacks.

Sailing on Grand Lake, Rocky Mountain National Park, is a sport not surpassed by even the splendid trout-fishing in its waters

Photo by Wiswall Bros.



My Vacation in the

By Trell W. Yocum

Photographs obtained through courtesy of the National Park Service

THERE are two incidents which occurred while visiting several of our national parks last summer that I shall not soon forget. The incidents in themselves were dissimilar, yet the purport of each expressed the very thoughts that had recurred to me more than once.

The first one happened in Glacier Park. Bob Steadman, a young farmer from Boone County, Indiana, and I had gone fishing on Lake McDermott before daybreak, and we fruitlessly whipped its surface in the gray mist until the rising sun turned to silver the glaciated peaks of the mighty mountains which walled in the whole of Swiftcurrent Valley. Then we tried our luck just below the lake's outlet in the turbulent foaming water of the mad Swiftcurrent River. In less than half an hour we had nine beautiful rainbow trout lying on a ledge of rock covered with damp moss. It was not yet breakfast time, and for some moments we sat in silence watching the sunlight creep down the sides of Grinnell Mountain turning the purple fir and spruce to green. Finally my companion turned to me and said:

"Do you know, these mountains make me realize what a little grain of sand I am in the vast eternal plan of things." He hesitated as he kicked a piece of shale into the water at our feet, and then added: "But even though they make me feel little enough, at the same time they tell me that I have something I sometimes forget in my work at home—that I have a soul—and, thank God, it is a living thing!"

The other incident occurred at the Canyon Camp in Yellowstone Park. Supper was over, the huge camp fire had been lighted, and merrymaking was at its height. As the logs burned to embers, the songs died out and the riotous laughter ceased. It was then that the story bags were opened in the various groups around the fire. My acquaintance on the right was

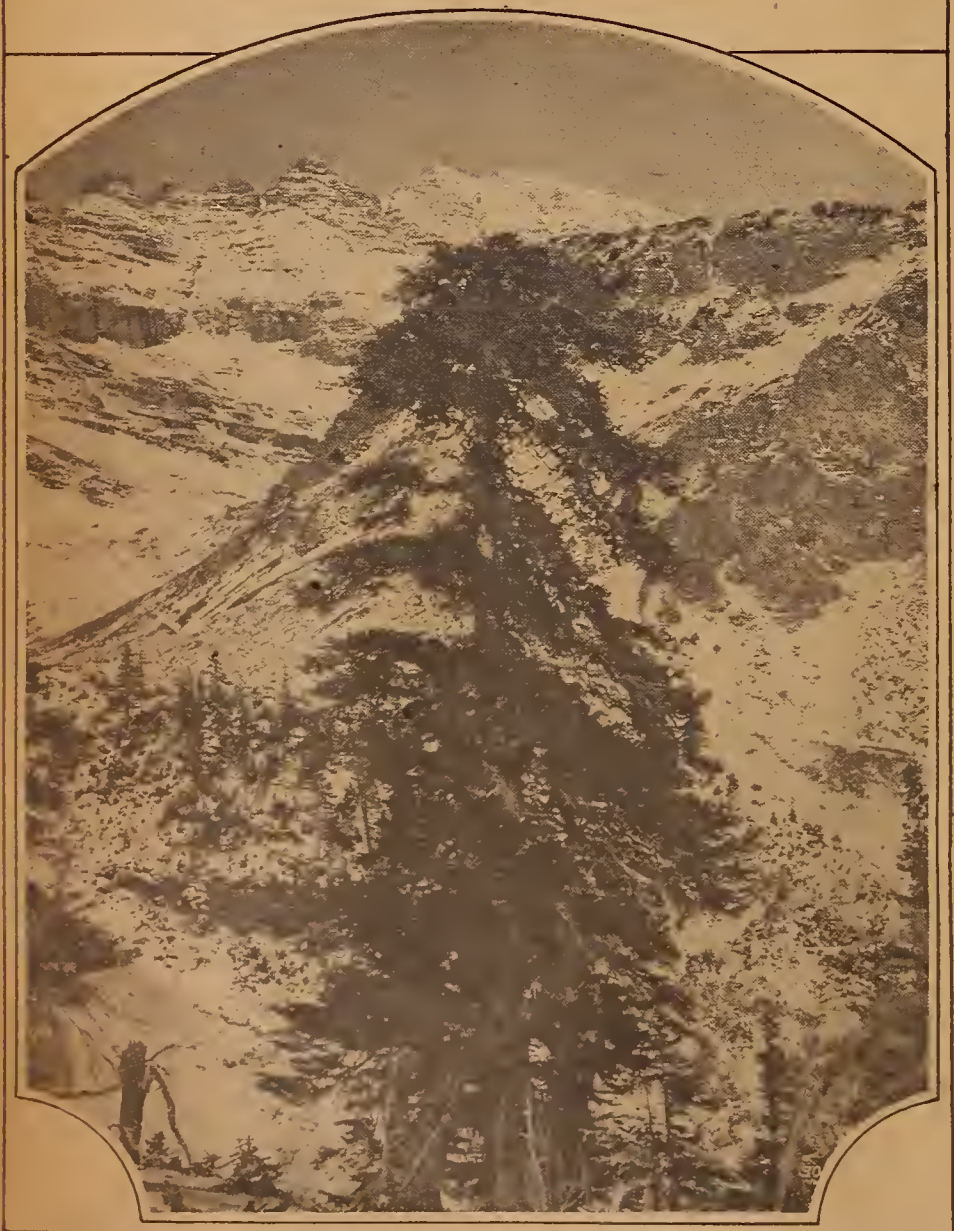
a grizzled veteran not far from sixty. He owned a farm in Oklahoma, and, after putting by the wheat, he and his wife had driven through to Yellowstone in their car. I don't remember his whole name, but his first name was David, for as we gossiped contentedly into the night several times his good wife suggested, "David, remember we must get an early start in the morning." (And if the David of Oklahoma should read this I wish he would write me.)

It was not his first trip to Yellowstone. Thirty-five years before he had worked on an uncle's ranch in Wyoming. At that time the cattle rustlers in the Jackson Hole country (which is just south of the park) gave the cattlemen all sorts of trouble, and he went with a posse to head off five desperadoes who had cut off part of a herd. Their pursuit was not altogether in vain, for, as he put it, "We decorated a sizable cottonwood with two of the skunks," but the others made their escape into the vastness of the Teton Mountain.

AFTER the exterior "decorations" had been completed, he and six other young fellows decided to take a trip through Yellowstone Park. They obtained a grub wagon and started on a pleasant, leisurely, adventurous trip. The roads were mere trails and more than once it was necessary to cut a way through the trees and underbrush for the wagon. He remarked that little change had taken place in those thirty-five years, except the building of splendid roads and the establishment of hotels and camps. If anything, he believed that he had seen more wild animals on this trip than on his first one.

How long we talked I do not know. But the embers had died and the moon was near the western horizon as we arose to retire. I asked him in parting what was the thing that had impressed him most on this trip.

"I'm not sure you'll get the answer you



Sopris National Forest, Colorado, looking up Travelers Gulch to Castle Peak, 14,259 feet from the Pear Pass Road. Here is unfolded a panorama of colors—the white of snow, the green of spruce, and the brown of rock—that one cannot soon forget

Photo by H. T. Cowling



Reflection in Upper Geyser Basin, in the western part of Yellowstone Park. This natural steam table works twenty-four hours a day

The top of the world, summit of Mount Eddy, California, fire lookout



Where a glacier gorged its way out in the Rocky Mountain National Park, at Loch Vale

The one he lost, in Bear Lake, Rocky Mountain National Park, which is 9,600 feet above sea level, and 90 miles from Denver

Photos from Wiswall Bros. and the Denver Tourist Bureau



Photo from H. T. Cowling

Vernal Falls, Yosemite National Park, 5,044 feet above sea level. The falls make a sheer drop of 317 feet to the jagged floor of the gorge below, raising a thick mist that keeps the surrounding vegetation a fresh green from spring to autumn

National Parks

expect," he answered, slowly rubbing his hand on his chin. "I like the geysers—they're so weird. The hot springs are interesting, and the lakes and falls are wonderful. As for the Yellowstone Canyon—well, I can't believe there is anything finer in the world. But these mountains"—he extended his hands at arm's length and then dropped them limply at his side,—“I can't tell you how they strike me. Our trip here has rolled a quarter of a century off my shoulders. Ever since our marriage we've been feedin' our bodies with food and our minds with worries.”

In the moonlight his grizzled features were softened with humor as he continued. "But to answer your question: The thing that has impressed me most on this trip was to discover how badly we needed a balanced ration."

And as we shook hands he said very solemnly: "Yes, sir, now we're feedin' our souls."

If you were to ask me why you should vacation in our national parks or national forests, I would be the last person to say that you should go for your soul's sake. Rather, I would tell you to go with no other object than to see. I would tell you of the great mountains of the Rockies whose bald and jagged peaks pierce the clouds, of the valleys rich in verdure, of shadowy hollows in which lie turquoise lakes, of massive columned trees which seem to support the dome of azure blue, of white-veiled mist that streaks the distant mountainside as it tumbles noiselessly from the heart of a glacier or hidden lake above.

I would tell you of crisp mountain mornings with their mingled aromas of fir, frying fish, and coffee; of swift-rushing ice, fed streams teeming with trout; of saddle horse trails through meadow and over passes that are fringed with wildflowers; of the wild animal life that abounds; of evenings by the campfire; and, last but not least, the precious solitude, under the brilliant stars, of night's sounds and silences.

Yes, by all means, go primarily to see. Your soul will take care of itself.

Several times I have had city acquaintances ask me whether or not farmers take

vacations. My usual reply is: "Why shouldn't they? Because they happen to be in the business of farming, does it make them any less human than other folks?" And then I tell of an interesting talk I had last September with Horace M. Albright, superintendent of Yellowstone Park. Mr. Albright stated that during the summer of 1918 approximately 15,000 people went through Yellowstone, while the figures for the 1919 season he believed would reach 75,000. The number who drove through in their own cars far exceeded those of any previous season, and in his opinion the majority of those driving their own cars were farm folk. My own observation on a trip of some 12,000 miles last summer substantiates his statement. Everywhere I traveled I encountered farm families traveling in their cars, well equipped with tents, food, cooking utensils, and reserve supplies of gas and oil. The wheat crop had been cared for, the corn laid by, and in the interim before harvest they were vacationing for all there was in it.

THERE are fifteen national parks, of which nine are of the first order in size and beauty. Until recent years comparatively little was known concerning them—in fact, three of them have been created national parks since 1910. Everyone ought to know more about them, and ought to visit them when possible, for, as someone has said, they contain more features of conspicuous grandeur than are readily accessible in all of the rest of the world together.

Yellowstone National Park, in addition to its geysers, has many hot springs which build glistening formations of brilliantly colored deposits. It has a wonderful canyon, its rocky sides colored with all the tints of the rainbow, while as an animal preserve it is the largest in the world. The bulk of the Yellowstone lies in Wyoming, though small portions spread over into Idaho and Montana.

The Yosemite National Park, located in California, in addition to its noted valley and its falls higher than eight Niagaras, has a river called the Toulumne, which spouts wheels of water [CONTINUED ON PAGE 34]

What 790 Ohio Farmers Found Out About Their Tractors

By James A. Howenstine

Of the Agricultural Engineering Service Company



This is Mr. Howenstine, the author of this article. His home is in Columbus

FEELING that there has been a lack of definite information on which a farmer can base his judgment in the purchase of a tractor, the Department of Agricultural Engineering of the Ohio State University recently sent out a two-page questionnaire to all the tractor owners of the State, hoping to get

some definite information, based on the farmers' experience, which would give some light on the adaptability and economy of the farm tractor.

In spite of all that has been said and written concerning the general performance of the tractor, it was on this survey that the department hoped to secure actual data from the farmers' experience. This survey was in charge of C. H. Sprague, and was carried on in co-operation with the State Department of Agriculture.

Forty-five hundred questionnaires were sent out, and the 790 replies received formed a basis from which real results and experiences were obtained. Some interesting and unexpected information was uncovered, all of which you may be able to use if you are contemplating the purchase of a tractor.

Take plowing: Answers showed that farmers over the State do not vary much in the depth they plow with their tractors, 7 to 7½ inches being the popular depth.

Most farmers do not keep an accurate account of the fuel used, but seem to know in a general way the approximate amount consumed. This amount was found to vary greatly, according to the kind of work being done and the condition and type of soil. The rate of plowing by the various tractors varied with the size and shape of fields, speed of tractor, condition and type of soil, spring or fall plowing, but did not vary in direct proportion to the number of bottoms pulled.

Answers seem to indicate that some tractors packed the soil more than others, but it was the consensus of opinion that where judgment was used little harm re-

sulted from packed soil. Six factors influencing the packing of the soil were reported and they are as follows: (1) type of soil; (2) type of tractor; (3) condition of the soil as regards to moisture; (4) undrained land encourages packing; (5) soil is packed more in spring than in fall; (6) whether or not the drive wheels are run in the furrow.

Many answers mentioned packing at the ends where the tractor turned, while others stated that the tractor loosened the soil rather than packing it. The following tractor table shows the general opinion in regard to the above items.

	Acres Plowed	Average Depth	Gallons Fuel
Two bottom..	5.60	7.46	2.69
Three Bottom..	7.14	7.40	2.75

IS PACKING DETRIMENTAL?

Yes.....87 No.....490

The replies indicated that practically all the tractors were used more or less in seedbed preparation. Usually one or two double disks were pulled, but often additional tools, such as a harrow or cultipacker, are used. Several answers mentioned packing when the soil was not dry, but as a rule the farmers were well pleased with the tractor as a means of seed-bed preparation.

In answer to the question,



Tractors under test at Ohio Tractor Demonstration. Tractor demonstrations are taking on real practical value. The day of the flashy show is passing

whether or not the tractor was applicable to the cultivation of corn, 625 answered no, and 21, yes. Practically every farmer who owned a three or four wheeled tractor agreed that it was not a practical proposition. The two-wheel type, where the operator sits over the plows and handles them much in the same way as with the horse cultivator, is the most applicable to corn cultivation, and of the 21 replies re-

ceived from farmers operating this type of tractor, 19 stated that it was satisfactory, and two, that it was not.

It was found that 3.86 per cent of the farmers used their tractor for cutting hay, and that practically all agreed that cutting hay is an operation which can be accomplished more efficiently with horses. Of the farmers using their tractors for cutting hay, only four were found who used two mowers, so that, from a labor standpoint, the tractor cannot be considered adapted to this kind of work. The four-wheel type was just as popular as the two-wheel type, with the majority favoring the lighter tractor. Nothing definite was found as to the number of acres cut per day, as the average farmer cuts by the job, and not by the day.

In pulling a wagon and loader, practically all owners agreed that the tractor surpassed the horse. Horses cannot be controlled like the tractor, and the steady, even, constant pull of the tractor has won many admirers. One farmer even attached a side-delivery hay rake to his

There is only one sure way to judge the merit of a tractor—actual field test, the way these Ohio farmers did



were two binders used—not because the tractor would not pull two, but because the farmer had but one. Many farmers objected to the use of the tractor for this operation because of the extra man required to operate the binder and tractor.

The following table shows the general opinion in regard to using the tractor in harvesting work:

CUTTING HAY		PULLING WAGON AND LOADER		CUTTING WHEAT AND OATS	
Yes	No	Yes	No	Yes	No
26	621	246	401	244	406

The amount of belt work the farmer can do with his tractor often determines largely its economy and practicability, for its use in the field occupies but a few days a year. Below is a table showing to what extent tractors are used for belt work.

GRINDING FEED		FILLING SILO	
Yes	No	Yes	No
331	251	325	269
BALING HAY		THRESHING	
Yes	No	Yes	No
106	486	110	478

It appears that grinding feed and filling the silo are the most popular uses of the tractor for belt work. The initial cost of the baling press and thresher no doubt accounts for the small use of the tractor in these operations. Quite a few farmers are using their tractors with corn shredders.

An interesting fact concerning the size and speed of the belt wheel was deduced, for replies seem to indicate that the larger the pulley and the more moderate the speed, the greater was the popularity of the tractor for belt work. In the following table are given the results of the deductions on eighteen types of tractors, showing a verification of this conclusion: [CONTINUED ON PAGE 44]

My Tractor Does the Work of Six Horses

By B. L. Wiedenfeld

IHAVE just finished reading the letter of Mr. McClure and the editor's note stating that he desired to have more of these letters. I believe you are taking a wise step, Mr. Editor of FARM AND FIRESIDE, not only to the benefit of your magazine, but also to the great benefit of your readers—especially those that intend to buy a tractor, or to those that have occasional troubles with their machines.

The tractor is the greatest advertiser that has ever been found for extensive and intensive farming. I believe that by the use of a tractor modern agriculture has been made successful. From my experience I derive the opinion that it takes a farm of 125 acres or more to make the tractor pay like most purchasers expect it to. But there is a tractor for every farm and for every purpose.

The farm on which I use my tractor is about 200 acres, and this would require every bit of six good horses, because I put nearly all in grain. Besides, it would require an extra hand and team during the seeding and harvesting time. What it would cost to keep those six horses I can't tell you, but I know that they would cost about three times what it is costing

me now. The cost of keeping my tractor is not very large. When I am plowing I use about 20 cents' worth of kerosene to the acre. The lubricating oil, gasoline, and grease amount to about 8 cents an acre. This makes about 28 cents to the acre for plowing, and plowing 10 acres a day costs about \$2.80. I always consider a day's work to cost me about \$2.80, whether I am plowing, disking, or reaping. Except when I am doing a small job, the cost is according to the load.

The tractor I chose for my 200 acres in cultivation was a 12-20. The reasons I chose this make were: First, it was the proper size for my farm; second, it wasn't a cheap and half-constructed tractor, but backed by years of experience; third, I considered the type of motor it had, as I believe it takes a four-cylinder four-cycle motor to make the small tractor successful; fourth, this tractor is easily accessible to all parts by only lifting up the sides of the hood, which makes it easy to take it apart and to replace any worn parts; fifth, it was of the four-wheel construction, as I believe that every tractor should have four wheels; sixth, it was of a very simple

and durable construction, as I believe that the fewer parts a tractor has the less there are to wear out.

I put nearly all the fields in grain, and attend to every acre myself, except during reaping and threshing time. In summer I plow every acre with it, and do all this myself, averaging about 10 acres a day with a four-disk plow. The last two years I plowed 500 acres on the average of 10 acres a day, counting delays, breakdowns, etc., and at the same time keeping the tractor in A-1 condition. I don't claim to be breaking any records, but if you put these figures before the ordinary small-tractor owner he might consider them well worth looking at.

After I am through plowing I disk my land and put it all in good condition for seeding time. I do all this with the tractor. But when the time comes to seed I rent a few horses, as I need them only a short time. I figure that this is cheaper than the equipment would cost to fix up a good rig to seed with my tractor. But I expect that some day I might also do this job with a tractor. When reaping time comes there is nothing that beats a tractor in

pulling a reaper. I have seven speeds on my tractor and I set it to go about 3.5 to 4 miles an hour and you ought to see the bundles come out.

One thing that will cut my story shorter than that of some of your readers' is that I will not be able to tell you anything about breakdowns, as I haven't had a breakdown in the two years I have owned my tractor. Now, I don't want to claim that I haven't had any repair bills, but they have been small, because I always repair and replace in time. I look my tractor over every now and then, and I look for worn parts that need replacing. So I keep my tractor always in good shape, and avoid large repair bills. I do all the repairing myself, and don't let anybody else fool with it. This is one thing that cuts down the expense a good deal.

I am very enthusiastic over power farming, and it can't be beat in my opinion if the farm is any way decent and the man operating it uses just a little common sense; that is all that is required to make a modern tractor a success. Machinery in a few years is going to play a still greater rôle in modern agriculture.

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GOODYEAR

CORD TIRES

Grace Margaret Gould Says

You should keep yourself at your best if you hope to do credit to your new clothes, for they have dash and color and a distinctly youthful look



Dress Suggestions

THE fashionably dressed woman is wearing a short skirt—and about anything else that she pleases. The blouses are most varied. They hang loose and straight, are tucked in, and are also made looped under to give the bouffant effect. And there are fetching basques—fitted ones with a decided nip at the waistline. Sleeves at their fashionable best are short and kimono in style, though many smartly dressed women wear the three-quarter length bell sleeve.

It is rumored that in the fall we are to wear the uncomfortable high choker collar, but at present the neckline is low. It is cut square, round, in a deep U, or straight across. The short skirt varies in shortness from seven to eleven inches from the ground. The younger and smaller the woman, the shorter the skirt. If she is old or stout or tall, then down it should come a little. Think this over and you'll see it's right.

Colors are gay, the loveliest shades being seen. Quite in harmony with the freshness of spring is the vogue for green. All shades of green are modish, though the smartest tones are the brilliant green we are familiar with in the Italian flag, and the jade-green which hasn't too much white in it. Grass-green is used as a combination color, and green with a tinge of blue known as grotto. In the new cottons, much red is seen. Stylish gingham are in red and black combinations. Red dotted swiss is a novelty among summer fabrics, and yellow and ecru dotted swisses are much seen. Voile was never more fashionable. It comes in about every design you can think of. The voiles with wide satin stripes make up into very smart plaited skirts. By the way, the separate skirt is having a decided vogue of its own. It is box-plaited, side-plaited, accordion-plaited, and there are also the very practical two-piece models with big novelty pockets. Such materials as cotton gabardine, ratiné, voile, Fan-ta-si silk, surf satin, georgette, and Baronet satin are all used for these skirts.

For everyday wear the smock is looked upon with special favor. It is not only a utility garment, but also an artistic one today. With dark skirts of voile, taffeta, or ricotone, gay plaid taffeta blouses and basques are worn. These are worn over the skirt, and are finished with wide girdles which emphasize the long waistline. Odd little trimming touches are introduced in these girdles, such as upstanding turn-back rills of picot-edged organdie or fan plaitings of taffeta matching the skirt in color. Taffeta is specially liked for the silk dress, and it is trimmed with ruchings, plaitings, or shirrings. Figured foulard is also used to trim the taffeta frock. Many of these affeta dresses have tunics, and frequently the way the tunic is fastened to the skirt gives the long waistline effect. The majority of these little silk dresses have a very short sleeve, and it's of the fabric rather than a transparent material. But there are affeta dresses with elbow-length bell sleeves finished with a net or chiffon under sleeve.

In millinery and dress trimmings everything glistens. In Paris, ribbons, ilks, and hat trimmings, such as flowers, ruits, and wings, have a waxed and shiny effect. Raffia is another smart hat trimming. There are silk hats and georgette hats embroidered in raffia flowers.

Inquiries promptly answered.

Do You Know

That water in which a bit of cream of tar has been dissolved makes a good bleach for handkerchiefs? Wash them first, then try this.

That the best way to sew buttons on very sheer fabrics is to baste lawn or a bit of tape to the under side? In sewing the button make the stitches through both the material and the lawn, cutting the lawn away close to the button after it has been sewed in place.



The Pattern of the Month

IT'S a smock for Maytime—comfortable to wear and the smartest thing out. The material is the fashionable cotton ratiné in a soft tone of lavender. The pockets, collar, and cuffs are blanket-stitched in yellow wool, and the little tassels are wool too. The smock is a slip-over-the-head model. It is slashed in front and buttoned to a shield. The little buttons and the big buttons are covered with the self fabric. If one has the time, they are prettier with a bit of the wool embroidery for decoration. Another charm-

ing color combination for this useful smock is soft green blanket-stitched in white.

Farm and Fireside will furnish a pattern for this smock. It is No. F. F. 3871—Smock with Short or Long Sleeves (including directions for embroidery). Sizes, 16 to 18 years and 36 to 40 bust. The price of the pattern is sixteen cents. Send your order to Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City. Be sure to state the size desired, and write your name and address plainly.



Seen in New York



SHE was the hostess at a matinée box party, and sat a bit in the background. That's why it was hard to tell whether the dangling ornaments she wore belonged to her hat or her ears. The hat was fluffy firefly tulle, the airy crown resting on a narrow puffed brim of shiny black cellophane—the new glazed material which is now so fashionable. Dangling over each ear were jet pendant ornaments, which at first glance appeared to be earrings.

Many of the smartest girls seen at the country clubs these days wear a scarf and cap to match their sports skirt. The fabric is generally some gay-toned silk like Baronet satin or Newport cord, trimmed with angora, plain or checked.

If the shop windows on Fifth Avenue tell a correct fashion story, about every other little girl in New York will wear the bloomer dress. The smartest and newest are black sateen blanket-stitched in a bright color, while the bloomers, which are plainly visible, match the bright embroidery. Black and rose are a favorite combination, and so are white and orange.

Though she was a New York girl who spent thousands of dollars a year on her clothes, yet her trousseau furnished many a practical idea to the girl with a much smaller dress allowance. One silk crepe

wrap, for instance, was made of a square of the material, fringed on all edges and heavily embroidered. At the top, about eighteen inches of the material was folded back, forming a deep straight-across collar. At the neck under the collar, there was a casing through which ran a silk cord. This cord tied in front, and was finished with long tassels. Why can't any silk shawl with a fringe border be used in this way to form a fashionable wrap?

Her blouses alone were really worth exhibiting. Many were of georgette, hand-painted, but the point for the girl whose father isn't a millionaire was that any number of these lovely overblouses were made with contrasting sleeves—contrasting in color and fabric too. Why isn't this a good make-over idea?

One cannot stroll up the Avenue now without noticing the new veils, floating gaily from trim little hats. They are one yard square of net or Chantilly lace, and they are bordered with silk-run designs. Taupe, navy and brown are the favorite colors; and you will see, too, jade-green veils worn with green turbans, and white veils for sports sailors. Much art is shown in the hanging of these veils—sometimes with the corners on the shoulders, and again in the center, front and back.



Looking Your Best

LOOKING your best depends more upon yourself than your dress. Make the most of your good points and the least of your bad ones—then dress becomingly and you will be at your best.

Consider well your hair. The hair really sets off your face. Your whole expression depends upon it. If it is dull and lifeless, that's the way you look. If it is fluffy and vibrant with life—again, that's the way you look. If it doesn't harmonize with your dress, then your whole appearance is discordant. Know your own hair, and then care for it accordingly. If it is oily, there are many things to do to remove the oiliness and get it in a healthy condition. It needs washing, airing, tonic rubs, and the scalp needs massaging.

Here are some little hints worth remembering in treating oily hair. Shampoo it, but not too often. Once every three weeks is sufficient. For a little luxury, try in between times the dry shampoo, which is perfumed with violets. But be sure you brush out all the powder. Don't forget that oily hair needs a sun bath every now and then, and it needs an airing too. Take it down and let the wind blow through it when you can.

A good antiseptic soap is excellent for the shampoo, but be sure to rinse the hair so every particle of soap will be removed. A little lemon juice in the last rinsing water will help to accomplish this. Do not brush oily hair too often or too vigorously. It's the dry hair that needs the brushing. For the oily scalp there are tonics specially prepared which will not overstimulate the oil glands, and which contain sufficient quinine to act as a stimulant. And there are other tonics having astringent qualities which help to bring the oil glands back to normal.

Perhaps your hair is dry and brittle and not oily at all. If this is so, start in at once to feed and nourish it with a good tonic that has an oil base. Crude oil warmed and rubbed thoroughly into the scalp will work wonders in nourishing starved hair. And there are tonics nowadays that will produce the same result. They have petroleum as their base, but it is greatly refined, and the tonic is just sufficiently perfumed to make it agreeable to use. Use a medicine dropper in applying the tonic, and be careful to get it on the scalp and not on the hair. Once a month is sufficient to shampoo dry hair. Soap shavings cooked in a little water until they are dissolved into a soft jelly make a good shampoo.

It's just miraculous the part wavy hair plays in looking your best. It seems to soften the entire outline of the face. It really helps to make your clothes more becoming. Now that hair wavers come so covered that they are soft and pliable and do not break the hair, there is no reason why they cannot be used every night. And you won't have to use them so often if you first dampen your hair with a new fluid before winding it about the waver. This fluid does not harm the hair in any way, and helps to make the wave more lasting.

Don't let me forget to remind you to select a style of coiffure that is suitable to your face and figure. It's not only the care you give your hair, but also the way you wear it, that helps you to look your best.

Inquiries promptly answered.

Do You Know

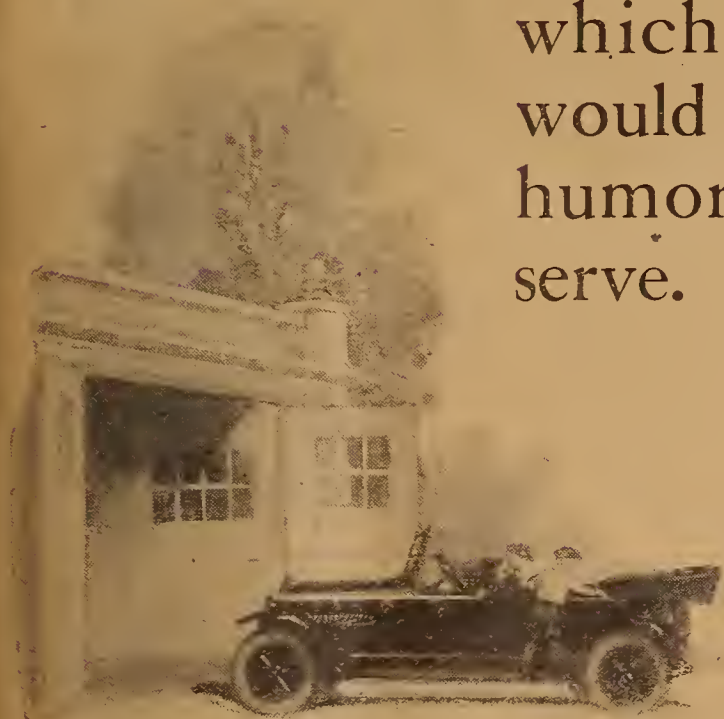
That a red rubber sponge that you can buy at any five-and-ten-cent store is a wonderful wall paper cleaner? It also does fine work in cleaning picture frames, painted walls, and woodwork.

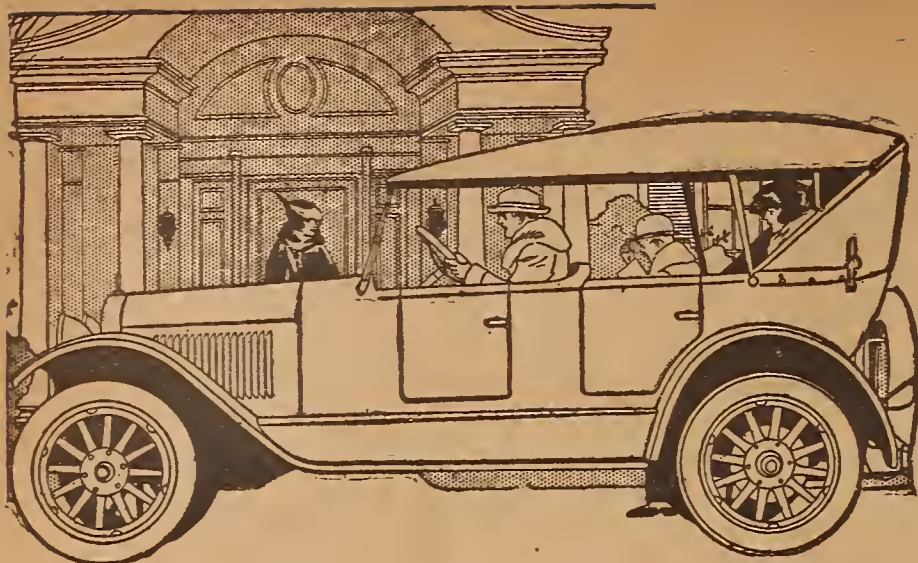
That if you sew much, two thimbles are better than one? You know how the index finger of the left hand soon becomes rough by the needle pricking through. Well, you can prevent this by using one thimble on this finger, and the other, in the usual way, on the second finger of the right hand.

HAVEN'T you noticed how the Hupmobile is included in practically all the calculations of the family which owns one?

It is almost as though it were regarded as one of the family circle. It is endowed with something very like a personality.

This is so, no doubt, because the Hupmobile possesses those satisfying qualities which, in a human being, would be everlasting good humor and willingness to serve.





IN the Elcar you get that soundness of construction, mechanical simplicity, and continuous trouble-free performance you heretofore have looked for only in higher priced cars.

You get that beauty of style lines, grace of design, and exclusive streamline effect in the Elcar, which are the combined refinements of fifty years devoted to highest quality carriage building, twelve years having been confined to making the Elcar the foremost reasonably-priced car in reliability, long life, and service continuance.

The Elcar values can be definitely fixed by noting those nationally preferred units it is composed of.

From these standards of exceptional quality there will be no deviation, unless opportunity for betterment develops in the Elcar's modern, fully-manned nine-acre plant.

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Three-Passenger Coupe,
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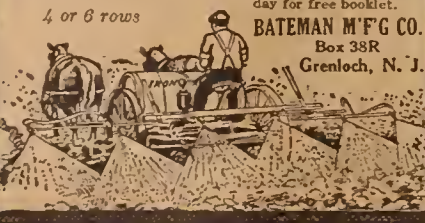
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A 40-mile ditch in Daviess County, Indiana, that has changed a lot of water-soaked land into fertile farms

They Bucked the Ditch, But Their Farms Are Worth Double To-day

By E. Gregory of Indiana

THE biggest drainage project ever attempted in our county has just been completed—all but the lawsuits. And there are only two cases yet to be settled—one a damage suit, and the other has to do with the contract side of the thing. The contractor claims that the job is done, while the surveyor contends that some more work must be done at the outlet before all plans and specifications are fully met.

Whichever way that this is settled does not matter a great deal, because the big ditch is there doing duty, and doing all and more than was ever expected of it.

Referring to the court proceedings, one man remarked: "That's the way it goes—one lawsuit after another. Ditches and damages—they go together. The two words are spelled differently, that's all. They amount to the same thing. Always the damages amount to more than the cost of digging, and then before it's all settled the ditch has filled up with sediment until it's of no earthly use. Then we're right back where we started from, less a million or so of dollars for digging and ten millions in hard feelings and old grudges."

But that's only one man's viewpoint against probably a hundred or more who are pleased. Of course, there are always damages connected with a thing like this. And we propose to tell about both kinds.

This drainage project extends through the very heart of a swampy tract of land for just about 40 miles. Counting main, laterals, and all, there are between 37 and 38 miles, to be exact. The big ditch cost us \$73,724. Of this amount \$10,024 were paid in benefits, damages, witnesses, surveying, etc., leaving a cost of \$63,700 for construction. Quite a margin in favor of the ditch over damages.

Bonds were issued, of course, in order to raise the necessary amount of cash. These bonds run for ten years and bear six per cent interest, and but \$56,000 of bonds were issued. Enough of the landowners paid the whole assessment cash in advance to cut the bond issue to this figure. So there were a few satisfied customers.

Here is the case of J. G. Lugass, which is typical of all who were benefited:

"This ditch," he told me, "will easily make \$30,000 for me, by the time those bonds are due, on this 200-acre field alone. Before the ditch was dug it was worth \$10,000. Immediately afterward I was offered \$20,000, but refused to take it. There's \$10,000. It increased the yield of crops at least one third. Counting this at the lowest possible estimate, it amounts to

\$2,000 a year, or \$20,000 in ten years. My whole assessment for the period is a little less than \$500. Besides, the land is dry and workable now, and a fit place to live."

Mr. Lugass said nothing about the big advantage of having a good outlet for tile drainage. This and most of the other swampy land in the same neighborhood could not be tile-drained before the ditch was dug, because there was no outlet. Now all of this land is being tile-drained. Mr. Lugass put in 3,032 rods of tile this year on the 200-acre farm just referred to. And as to the modest \$100-per-acre price he mentioned, I happen to know that he wouldn't have any trouble in getting \$200 per acre, or \$40,000 for the 200-acre field—a clear gain of \$24,500 in land value alone, deducting the \$500 ditch taxes and the \$5,000 for tile drainage.

I ALSO happen to know that the productivity has been increased more than one third. Mr. Lugass said he could raise 50 bushels of corn per acre before the land was drained. Now he can raise 75 bushels per acre. But that 50 bushels just happened now and then. Now the 75 bushels comes every year, and very often it's closer to 100 bushels. And every farmer in the district has been benefited just as much, according to the size of his farm and the percentage of swamp land. And every man is taxed in proportion to the benefits he receives.

But the big benefits show up when you begin figuring on the civic and industrial improvement which results from any good drainage system. Where there was nothing but frogs and mosquitoes before, you may now see some of the finest farm homes in the whole country. Instead of the jaundiced, chill-chattering squatter, you can now see the brightest and happiest people in the world. Instead of some little "hunt-in' and trappin' and clarin'," there is the liveliest farming business you can imagine.

The manager of one of our telephone systems told me that he had 300 farm telephones in a certain section of this drained territory before it was drained, and that now he has 587 in the same neighborhood.

Back in the most inaccessible part of this wet district was a lot of timber—elm, cottonwood, ash, and such. After it was drained a cooerage works was put in, and this timber largely worked up. The work employed several men, and turned thousands of dollars back into the farmers' hands. In fact, there's no end to the "damages." "Ditches and damages—they go together."

Costs \$4 to Feed Hens That Laid Only 13 Eggs

THERE is one Wisconsin poultryman who really wanted to know whether rules for culling can be depended upon. He is co-operating with the poultry department of the college of agriculture in the "cull the flock" campaign. Six weeks ago he culled from his flock of 200 hens 40 birds that answered the description of non-producers. During the six weeks the 40 culls laid 13 eggs.

"The loss from unculled flocks is" well illustrated in this case," says J. B. Hayes, Wisconsin College of Agriculture. It cost \$4 to feed the 40 hens six weeks, and the income from them was 80 cents.

Where Cherries Came From

KERASOUN is a town in Asia Minor that has been the scene of several Armenian massacres, and is now a location for several agencies of Near East Relief, but the place has still a greater significance for the lover of fruit, because it is the home of the cherry tree.

When the Roman General Lucullus, after a victorious campaign in Asia Minor, carried home the shoots of a new tree, he named it the Kerasoun tree. Later the name was shortened to "karass," then to "cerise," and finally the Anglo-Saxon tongue evolved the word "cherry."

New York Sun.

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What wedding gift could be more appropriate? With the many Columbia models it is so easy to find exactly the right instrument for the new home.

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with the exclusive Columbia Non-Set Automatic Stop, the only automatic stop that requires absolutely no setting.

Invisible, built right into the motor, it operates on any record, long or short. There is nothing to move or set or measure. Just put on your record and listen to the music.

To make a good record great, play it on the Columbia Grafonola

COLUMBIA GRAPHOPHONE COMPANY, NEW YORK

Canadian Factory: Toronto



*Get the new Columbia Novelty
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Every Columbia dealer has it.*



New-Day Tires

50% to 75% More Miles

Green & Swett Co. of Boston have been watching mileage on Miller Tires.

They learn from hundreds of users that Miller Tires are adding 50 per cent to 75 per cent to tire mileage.

A. F. Wolke of Louisville watched the wear and mileage on 116 styles of tires which he repaired. Millers so far excelled all others that he now sells Millers only.

The Eldorado Stage Co. of Los Angeles tried out 22 makes of tires on 12-passenger Packard buses. Millers far outlasted any other tire.

A Taxi Test

The Hudson Taxi Co. of Detroit, on rather heavy taxis, average 15,000 miles from Miller Cords. And taxi use in traffic is almost the supreme test.

Facts to Know

Tests like these are going on everywhere. Hundreds of thousands of men are watching Miller mileage on their cars.

The results are everywhere discussed. And the demand for Miller Tires, last year alone, increased by \$11,000,000.

We urge you to make a test. Compare the Miller mileage with the mileage you get now. It may change your whole conception of tire service.

Miller Tires

Now Everywhere Discussed

Geared-to-the-Road

Registered U. S. Patent Office

Cords or Fabrics

What We've Added

Miller experts have spent ten years in perfecting these super-grade tires.

In the past few years they have almost doubled Miller mileage.

They have perfected a tread which, in our tests, outwears the best of others by 25 per cent.

They have perfected a Cord Tire which, in our ceaseless factory tests, averages 15,000 miles. And which often yields in road use from 20,000 to 25,000 miles.

They have secured uniformity. A Miller Tire very rarely fails of expectations.

They spend \$1,000 daily just to watch and test these tires.

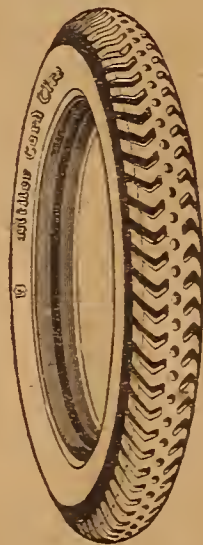
Test them on your car.

If you buy a new car, get Miller Tires on it. Twenty makers now supply them without extra cost.

THE MILLER RUBBER CO.
Akron, Ohio

Tread Patented

Center tread smooth with suction cup, for firm hold on wet asphalt. Geared-to-the-Road side treads mesh like cogs in dirt.



Schemes Other Farmers Worked Out That Might Help You

NOTE: Have you any devices such as these that you use on your farm? If you have send a description and a diagram of them in to FARM AND FIRESIDE and we will pay you for those that are used. THE EDITOR.

Repairing a Leaky Pipe



A LEAK in a water pipe may be quickly repaired by clamping a block of wood on the pipe. The block is channeled on one side to fit the pipe, and the channel lined with tar paint or a strip of old inner tube. *Russell Bates, Ohio.*

Spare Your Back

HERE is a handy cart that would fit in on every farm. It will save you a great deal of heavy lifting and carrying, and can be used every day in the year. Whether you want to move a barrel of salt just brought out from town, or a box or heavy piece of machinery, or maybe slopping and watering the hogs, the cart is right on the job. In a dry time especially,



when much water has to be carried, such a conveyance is almost indispensable.

Notice how the cart is made (the picture tells its own story) and then take two old cultivator wheels and make such a cart for your own use. *W. L. Nelson, Missouri.*

Helps You Fill Your Sacks

THE device shown in the accompanying drawing takes the place of one or two hands, when it comes to filling sacks with grain or potatoes.

Get a hoop that will slip into the sack easily. Take a piece of strong wire. Wrap this around the hoop two or three times outward, toward the top. Cut the wire, and file to a sharp point. Make four of these points at equal distances apart around the hoop. This holds the sack open.



Now for holding it up: Take a longer piece of wire, having a loop in the middle, twist the two together for a ways, then have the ends free. Finish by making a hook on each. Hook this loop over a beam or rafter, and slip the hoop on the hooks at the ends, allowing the bottom of the sack to touch the floor.

Mrs. G. A. Acree, Minnesota.

Making Grinding Easy

I FOUND, when sharpening mower knives, that my arm got sore when I came to the end, as I had the whole weight on one arm. To remedy this I nailed a piece of two-by-four on the corner of the shed, alongside my grindstone, and from this suspended a discarded piece of driving line. I can now, while grinding one end of the sickle, insert the other end in the strap, and thus make grinding easy. *Ed Reid, North Dakota.*

You Can Make Your Own Well Tiling



The inner form has hinges at two different places, so as to fold inward sufficiently that the concrete is not disturbed when removing the form.

The mixture for the tiling is made of one part cement, two parts clean sand, and three parts broken stone, using a sack of cement to the joint of tiling. Using one's labor in spare hours is a big saving over the cost of such a large joint of clay tiling, which costs \$3.50 in our section. Each joint of tiling has a collar at one end to receive the next joint and make a perfect fit.

Such a section of concrete tiling is heavier than a similar one of clay, and is let down into the well by means of a chain and windlass.

When such concrete tiling are once placed



in position you have an excellent wall for your well, one that will last for generations, and it will never cave in during a rainy spell. It is also large enough to allow a person to enter and clean out the well. *P. C. Henry, North Carolina.*

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General Motors Trucks

Answering the Question "What Truck Shall I Buy?"

When you have decided that you need a motor truck you are faced with the question:

What truck shall I buy?

After the matter of capacity has been considered—a matter which will depend on your work—your choice should be based on just one big point—one which means more to you than anything else.

From your point of view, the truck that can be depended on to stand up and keep on running is the one that will, by all odds, serve you best.

GMC Trucks have been built for years with this ideal in view—that they shall make for themselves a reputation for absolute dependability.

And that reputation is established; it is becoming more notable every day.

In GMC Trucks there is real, honest quality—*built in at the GMC factory.* And you can't get more out of a truck than the manufacturer puts into it, no matter how hard you may try.

Ask for a copy of our free book (F) "Motor Trucks on the Farm"

GENERAL MOTORS TRUCK COMPANY

One of the Units of the General Motors Corporation

PONTIAC, MICHIGAN

(638)



Working and Printing Butter

By E. R. Charles

I HAVE often wondered if the average farm buttermaker realized the importance of working butter properly, after it has "come" in the churn. I have found that there are many buttermakers who do not think that it is necessary to bother with a butterworker. I know of a certain lady who has a good reputation as a buttermaker, but I have noticed that her butter sometimes has a pale, salvy look to it. I did not know the reason for it until I saw her working her butter. She took it in her hands and kneaded it and squeezed it in her chopping bowl, and after she thought that it had received enough working she took a handful and pressed it into her butter mold to print it. By then it was a greasy mess.

One can realize it better when he understands that the temperature of the hands is around 100 degrees F., whereas the temperature of the butter should be in the neighborhood of 55 degrees. Such a difference, of course, makes the butter melt more or less, which spoils the grain. Then, again, in looking at it from a sanitary standpoint, working the butter with the hands cannot be as clean as when using a butterworker, as the butter is more apt to absorb impurities when made soft by the heat of the hands. It is true that bread is often made with the hands, but, although it would certainly be cleaner not to use the hands, bread or any mixture made of flour does not have the absorbing tendency of butter or other grease-like substance.

Butter handled with the hands is very apt to have a greasy, salvy texture, and it also has poor keeping qualities on account of being subjected to extremes in temperature.

I have noticed that quite a few farmers who have a fancy print for their butter do not realize that, although the mold may be supposed to print a certain amount in weight (in my neighborhood the one-pound seems to be the most popular), it does not always make the correct weight, depending somewhat on the firmness of the butter and the time of the year that it is made, and also on the way that it is handled. A very fancy print is more inclined to vary than one that is plainer.

I KNOW a farmer who had a nice hotel I trade for his butter. He was really a good buttermaker and had all the necessary equipment. He had a very fancy butter mold which made a "hit." But he lost his trade at the hotel and at other places. To-day he is selling milk instead of butter. He never has known the reason why he could not find steady customers for his butter. But one day I was talking with a man who was a guest at the hotel, and he told me that he had seen the hotel people weighing the butter, and there had been times when it was as much as two ounces under weight. The hotel people of course thought they were being cheated. I know the farmer who made the butter was honest, but I remember how he printed it. He would take a piece and press it into the mold hard, slide the ladle along the edge to even it off, and wrap it in parchment paper. "Of course there must be an exact pound, because it was a pound mold," he thought.

I know a woman who makes nice butter. It is printed in pound lots, but I found that I always got a pound and two ounces when I weighed it.

No doubt, you can hold your trade better by giving overweight than underweight, for the average person does not like to feel that he is being cheated, but it is not very good business to give a pound and an ounce when you are being paid for one pound.

Since learning about the above cases I have investigated my own prints. I was surprised to find how much the pounds varied. So, to be sure that neither my customers nor myself are being cheated, I always weigh the butter before printing it, and I find it is worth the extra time.

After the butter has been printed it should be wrapped in wet parchment paper. I know of a buttermaker who wraps his butter in waxed paper. When the customer gets it, it is generally quite a lot of work to peel off the waxed paper, as it does not come off whole, the way parchment paper generally does. Again, butter that is done up in waxed paper sometimes gets an oily flavor, especially if it should get too warm before using. Nothing but the best of parchment paper, made for the purpose, should be used.

Put on Weed Tire Chains

For Safety and Traction

Never start out without Weed Tire Chains when the roads are muddy and slippery. Take no chances. Prepare for accidents *before* they happen—not after.

Any farmer who drives without Weed Tire Chains, when the roads are slippery and muddy, is taking chances with his own life; he is liable at any moment to have a serious mishap and is risking the probability of aggravating delays.

Slipping and skidding are entirely due to loss of traction. Perfect traction on muddy, slippery roads is impossible without Weed Tire Chains.

For your own safety and comfort don't wait till it rains—stop at your dealer's today, when the going is good and buy a set of Weed Tire Chains.

Can you depend on your car? Is she always under absolute control—brakes working—wheels gripping and holding true? If not, what fun is there in driving? If you are a little nervous on wet roads you miss half the fun of your car.

Enjoy that safe feeling—Take the necessary "stitch in time." Put Weed Tire Chains on your tires at the first indication of wet roads or slippery going.

They are made of the best steel—electrically welded and tested—are easily attached and *do not* injure tires because they "creep"—sizes to fit all styles and makes of tires.

Always put on your Weed Tire Chains "at the first drop of rain"

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LARGEST CHAIN MANUFACTURERS IN THE WORLD

The Complete Chain Line—All Types, All Sizes, All Finishes—From Plumbers' Safety Chain to Ships' Anchor Chain.

Elweltra Trace Chains are "formed" and electric-welded on automatic machines, thus insuring smoothness, uniformity of construction and maximum strength. Every pair is carefully inspected and rigidly tested before leaving our factories.



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Will pay big money to men with autos. Install Rideezee, the BETTER THAN AIR INNER TIRE. Cheaper than tubes, a light resilient substance guaranteed ten years. Equip your car at agent's price. Sell to friends. The business of the future. RIDEZEE CO., ST. PAUL, MINN.

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Century Roll Roofing lays better, lasts longer and costs less. Made from best long-fiber felt saturated with our own secret formula. Fully guaranteed to defy sun, snow, ice, wind and weather. Anyone can lay it. Does not buckle, rot, crack, tear out or frazzle.

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Send me your name to day and I will tell you how to earn one of these splendid wrist watches in a few hours' time. Address D. S. Stephens, 150 W. High St., Springfield, Ohio

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We want one exclusive representative in each locality to use and sell the new Mellinger Extra-Ply, hand made tires. Guarantee Bond for 3000 Miles. (No seconds.) Shipped prepaid on approval. Sample sections furnished. Don't buy until you get our Special Direct Prices. Write MELLINGER TIRE & RUBBER CO., 903 Oak St., Kansas City, Mo.

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Low introductory offer puts this new saw rig within reach of all, at small part of cost of other rigs. Saws your winter's wood in few hours. Powerful 4-cycle motor. Easy to operate, light to move. 30 days trial to prove our claims. 10-year guarantee. FREE BOOK. OTTAWA MFG CO., 122 Main St., OTTAWA, KANS.



The Real Meaning of "Best in the Long Run"

"BEST IN THE LONG RUN" is a slogan that is almost as old as the history of tires. It grew out of the performance of Goodrich Tires on bicycles, and it grew into the *dependability* of Goodrich rubber products of all kinds. It is not just a catch phrase. It is a plain statement of fact.

It is really a mirroring of the confidence placed in Goodrich products by their users. In five words it crystallizes

the ideals, the policies, the principles of Goodrich.

It means "the long run" of good faith and good will—the steady building up of a confidence in the minds of the users, *which is the greatest asset a manufacturer can have.*

That is how Goodrich translates this slogan into terms of longest average wear, utmost dependability and known quality in all kinds of rubber products.

THE B. F. GOODRICH RUBBER COMPANY, AKRON, OHIO

Goodrich Tires

"Best in the Long Run"



National Ship by Truck- Good Roads Week May 17-22

THE first widespread demonstration designed to enlist all the forces connected or dependent upon short-haul transportation will be held throughout the United States May 17-22—and known as National Ship by Truck-Good Roads Week.

It has the support of great national associations vitally concerned with transportation. Leaders in the nation's business, in the financial world and in government circles endorse the Ship by Truck-Good Roads movement and this great demonstration of its importance.

MR. WILLIAM G. McADOO states:

"I heartily approve of every measure or effort to promote good roads throughout the United States and to enlarge the usefulness of the motor truck in order to increase needed transportation facilities in the country. This is highly important to business and industry of all kinds and especially to the farmers of the United States. The country has outgrown our railroad facilities and it will be a long time before the railroads can be brought up to the needs of the country. The most practicable, as well as the most immediate, relief that can be provided is through good roads and the motor truck."

Senator CAPPER, of Kansas, says:

"One of the greatest developments of the next twenty-five years will be the motor truck on the farm. I am interested in it because it relates to the development of the great West and the great western industry, agriculture. The day of the power farmer is at hand. It is to him that we turn in answer to the world's cry for greater production. He alone can supply us with the necessities of life and assure our essential national integrity, but he must be given tools worthy of his task. The motor truck, because of its adaptability, flexibility and its endurance, is one of the chief requisites in the scheme of power farming."

Senator TOWNSEND, of Michigan, says:

"The remarkable growth of motor transportation in the past few years, and its still more tremendous potentiality for the future, have brought us to a point where past procedure is no longer sufficient. Large sums will inevitably be expended on our highways to make them useful for longer periods and to decrease transportation costs. We need a broadened policy which will concentrate Government funds on national highways, releasing State and County funds for use on State and County roads. Nothing could be more valuable than a national discussion of this question, such as that proposed during the National Ship by Truck-Good Roads Week, May 17th to 22nd."


T. C. ATKESON, National Grange, says:

"The National Grange believes that the time has come when all National Government Highway activities should be unified in a single administrative department, and that a National Highway law should be worked out which will serve the welfare of the whole country and distribute the expense of highway construction equitably between the beneficiaries. I heartily approve the general idea involved in the Ship by Truck Week and the study and attention that will thereby be directed to the problems of highways, transportation and distribution."

SAMUEL REA, President of the Pennsylvania Railroad Company, says:

"I am glad to take this opportunity to express my view that it is most important, in the development of the motor truck for transportation purposes, that there should be co-operation with the rail carriers, rather than competition. Without doubt, there is a field where movement by rail carrier is not economical, and where the service could better be performed by motor trucks, but on the other hand any attempt to compete in the longer hauls with rail carriers under normal conditions is, in my judgment, uneconomic and unwise.

"By conferences the interests of both parties can be studied and conserved and the extension of the motor truck to develop territory not served by rail, or for short-haul and intracity movements can, I believe, proceed with advantage both to the rail carriers and the motor truck interests; while, on the other hand, if the energies of the motor truck interests are devoted to the placing of competing lines to take traffic for the longer hauls which have been developed by the rail carriers, it would result in no real increase in facilities, but in competition which would only be harmful to both interests."

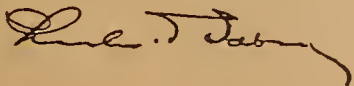


CHARLES H. SABIN, President, Guaranty Trust Company, N. Y., says:

"It appears most timely to me that this Ship by Truck-Good Roads Week should come just at this time.

"With ordinary transportation mediums seriously congested, a greater use of trucks will improve considerably the distribution of the country's necessities. Good roads are, of course, vitally necessary to truck activity on an efficient basis, and the two movements naturally interlock.

"I wish you and your associates every success in this good work for the nation."



It is the time for getting together in recognition of a great new industry that has grown up before our eyes—Motor Transport. It is occasion for congratulation for the great work already accomplished for Good Roads which has broadened the motor truck's practicability.

The motor truck takes its place today as the vital factor of short-haul transportation; as much a part of our economic, commercial and industrial scheme as are the railroad and shipping industries in long-haul transportation.

It has been a power in the development of our big manufacturing, wholesaling and retailing institutions.

Farm territory, heretofore isolated, is now within easy range of a market, because of the motor truck and good roads.

Nearly every long-haul shipment requires a short haul at each end.

If you regard the railroads as the long arm of commerce, you must reckon the motor truck as the fingers which reach in, here, there and everywhere, to pick up the load or place it at its destination.

The purpose of National Ship by Truck-Good Roads Week is to present to the public the necessity of a national highway system, and to visualize the achievements already attained in the motor trucking industry.

The new day is here—not only of a broader commercial greatness but a day of better national understanding which comes through swift, efficient transportation.

Congressman VAILE, Chairman, Committee on Expenditures in the Treasury Department, says:

"The time is as ripe for the formation of a definite national highway policy as for a definite Army or Navy policy or a definite foreign relations policy.

"The Townsend bill properly adjusted to the needs of both the public-land States and the private-land States presents the basis of a sound, constructive and permanent national policy, insuring the maximum of advantage to the Nation and to the several States.

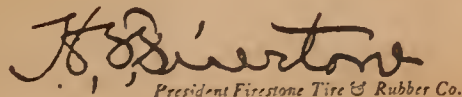
"Certainly great benefit should be derived from national discussion of the whole question of National Highways during the National Ship by Truck-Good Roads Week."



MR. BARUCH'S statement:

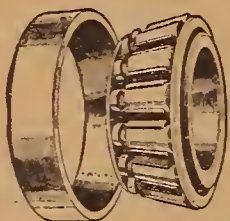
"Civilization means communication. It means communication of thought, of persons and of things. We need the telephone, the telegraph, the wireless and the mails to forward our written words; we need the means to bring our people together, so their spiritual intercourse may be established by contact and by word of mouth, and we need the avenues of transportation so that commodities in one section of America may be supplied to those which require them. Roads were the first method whereby communication was established. It is the cheapest method. Whenever we have a thing that is good and cheap, the next step to take is to make it better and cheaper.

"America should have good roads; she should have better roads, and, finally, she should have the best roads in the world. Every ounce of effort and every dollar of money spent to that end will return themselves a thousand-fold. Good roads quicken and make more full the national life. The beneficial effects of road improvement stretch to every point of our economic structure. We ought to spend money and thought and work on building up a vast system of roadways that shall eventually make every door of every house in every community easily accessible."

President Firestone Tire & Rubber Co.

Do You Know—



STANDARD PRACTICE

The use of Timken Tapered Roller Bearings at points of hard service in the great majority of leading tractors—end in power-driven farm machinery—is proof of leadership established on the tapered principle of design, quality of manufacture, performance, and service to the automotive industry.

that the problem of bearings in a tractor is just as important as that of the motor, fuel, cooling system or any of the rest of the points so commonly discussed by builders, dealers, and users?

that some of the oldest concerns in the tractor industry were the first to realize the need of a bearing that would resist thrust load, or radial load, and all combinations of the two?

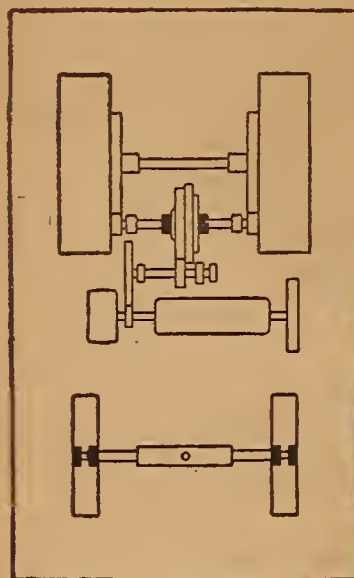
that the adjustable feature, the tapered design and high quality materials of Timken Tapered Roller Bearings are even more important in the tractor than in the passenger car because of the tractor's harder service?

that the leading tractors are now using Timken Bearings at from two to fifteen points of hard service, and that both the number of users and the average number of points of application show a steady increase?

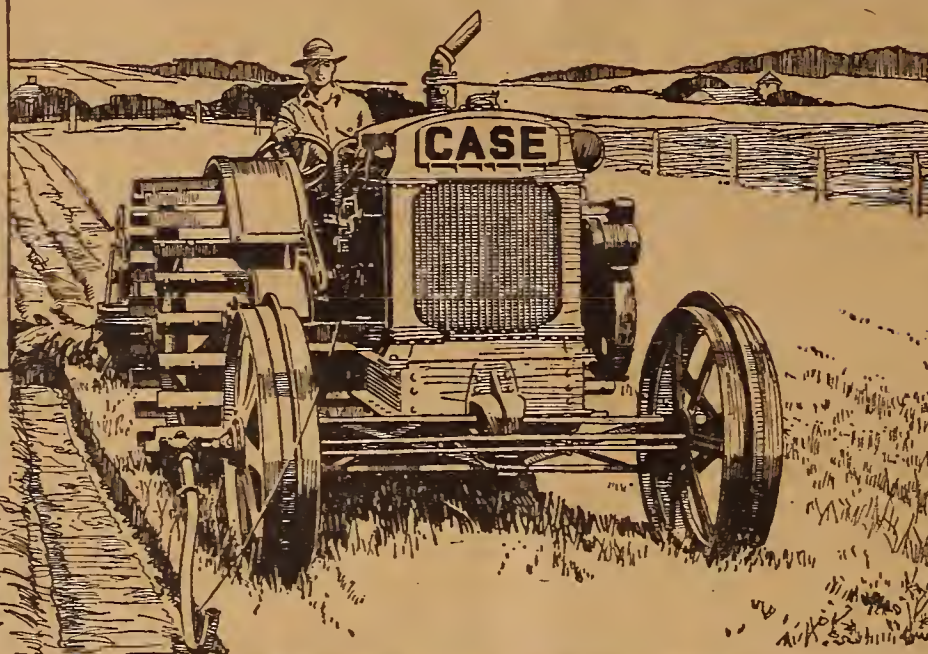
THE TIMKEN ROLLER BEARING COMPANY

CANTON, OHIO

Plants at Canton, Ohio; Columbus, Ohio
European Factories, Birmingham, England; Paris, France
General Offices, Steel, Rolling, and Tube Mills, Canton, Ohio



The black rectangles indicate where Timken Tapered Roller Bearings serve the Case Tractor, manufactured by the J. I. Case Threshing Machine Co., Racine, Wis.



TIMKEN BEARINGS

Pasture Solved High Cost of Farming for Me

SEVERAL years ago I decided to change my method of farming. I conceived the following plan to increase my profits and lessen the work. It was in 1917 when I made the change. The war was then on, and the price of live stock was very high. I had always followed grain-farming and did very little grazing, consequently feeding high-priced, hard-earned feed ate up my profits on the live stock at an astonishing rate.

Well, I sowed my fields down in grass, and turned the stuff out. At the same time I sold a span of mules which I now had no work for. I raise only a small amount of grain on which to finish them off; the high cost of fertilizer and farm machinery is greatly reduced, also a large amount of labor, which was very costly. I figured, however, that I needed more land, for it takes a greater number of acres when pasturing, but it is the easiest money that can be made on the farm.

I let part of my pasture grow all summer, and turn in late in the fall. This makes plenty of feed all winter, except when it is very bad or the snow too deep, then I haul out a load of hay and scatter it around lightly over the ground. Thus, at one operation, I have my feeding done, a large amount of seed scattered, and no manure to handle. Some of my fields have large open sheds, while others have nothing but hollows and groves of maple trees, which serve as windbreaks. It is surprising how cattle hunt these places. Last winter they were in sheds not more than twelve times all winter. The weather being mild, they grazed on that tall grass, and I never saw cattle do better; in fact, I am counting on realizing greater profits this year than ever before, provided the markets are anything like reasonable.

I now have time to partake of the blessings of life, while I used to work from morning till night tending the crops and caring for several teams. On wet days there was always machinery and harness to repair, and a thousand other things necessary to keep things going.

I had an old orchard in one of my fields, which was bearing considerable fruit. I saw the blue grass was knee-high under the trees, and decided to tear the fence away and turn in. Neighbors asked me if I wasn't crazy, but I told them I knew the grass was worth more, and would be easier gotten than the fruit, and I am glad that I made the change, for the elimination of work and cost means a good deal for us all.

H. D. W., Ohio.

For Fly-Ridden Wheat

REPORTS indicate that much early-sown wheat which has been badly damaged by the Hessian fly will probably be plowed under. Such plowing, say entomology and crop specialists, should be at least six inches deep and a jointer used on the plow in order to turn the infested plants to the bottom of the furrow. This should be done as early as possible, so that the "flaxseeds" of the fly will be buried before the adults of the spring brood emerge to lay eggs. Experiments have shown that very few of the adult flies are able to reach the surface when such land is well plowed and leveled.

Ten 10,000-pound cows will produce as much milk as twenty 5,000-pound cows; it takes only one half the feed to feed the former as is required for the latter; and, besides, one man can milk ten cows, while it takes two to milk twenty.

Why a Firm Seed Bed

[CONTINUED FROM PAGE 10]

writer has prepared many a seed bed, and has used a large variety of implements in this work, ranging from an old brush or stone drag to the tractor plows and pulverizers. He has seen a great development in the art of making seed beds, and has become firmly convinced that the right combination is at first the plow, second the disk harrow, and third the pulverizer.

If you are a power farmer you can make this perfect seed bed in two operations, pulling first the plow and second the disk harrow, followed by the pulverizer.

If you are a horse farmer you can do just as good a job, but you will have to go over your ground three times to get a perfect seed bed.

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CREAM SEPARATOR

A SOLID PROPOSITION to send new, well made, easy running, perfect skimming separator for \$19.95. Closely skins warm or cold milk. Makes heavy or light cream. Different from picture, which illustrates larger capacity machines. See our easy plan of

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DELCO-LIGHT



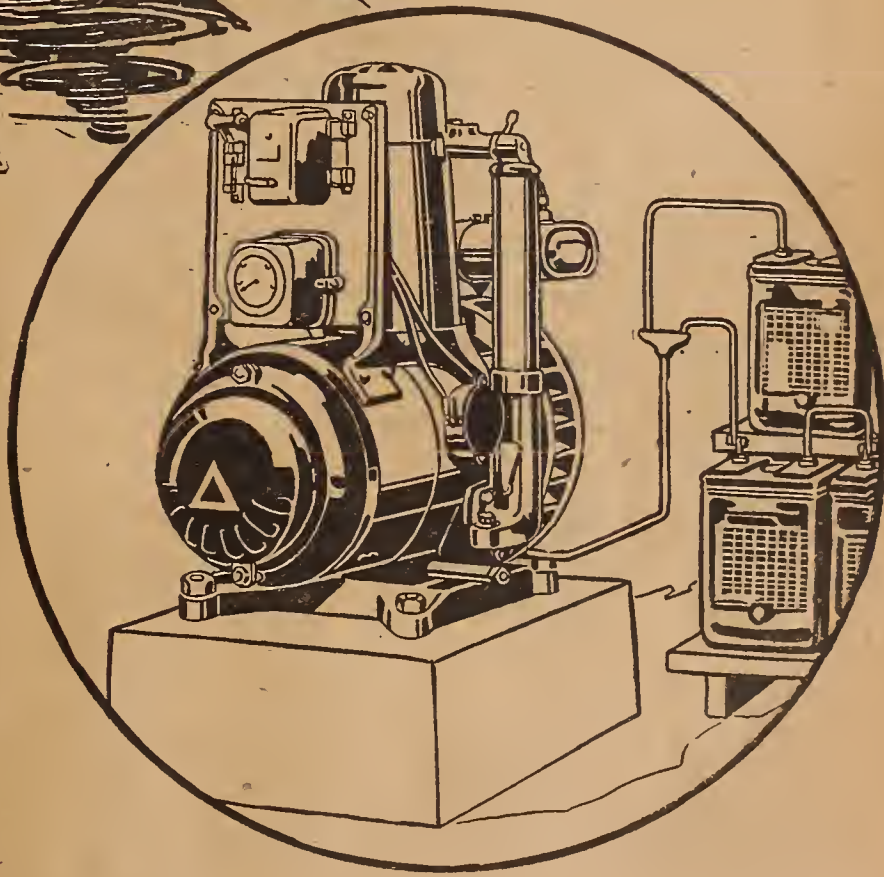
"DELCO-LIGHT is the Best Time and Labor Saver on My Farm"

Delco-Light users, everywhere—over 100,000 of them—think and say this about Delco-Light. Nearly every testimonial letter contains such a sentence. It is proof of the satisfactory service Delco-Light gives. It is an indication of the place taken by Delco-Light in the hearts of those who have installed it.

The clear rays of electric lights make the house, the barn or the barnyard bright as day, at the touch of a button. The electric current pumps and carries the water just where you want it, and performs a score of other jobs swiftly and silently while you do something else.

The experience of Delco-Light Users and their combined opinion is the best proof we have to offer, of two things—that Delco-Light is mechanically correct—and that it is a paying investment.

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DAYTON, OHIO



A complete electric light and power plant for farms and country homes, self-cranking—air cooled—ball bearings—no belts—only one place to oil—thick plates—long-lived battery.

**Valve-in-Head Motor
Runs on Kerosene**

There's a Satisfied User near you



The Light that fooled the Radish

CARBIDE GAS produces a light so like actual sunlight that vegetables grown under its rays at Cornell University Experimental Farms attained three times the growth of others grown by sunlight alone:

Think of having a light like that in your home! The most natural, restful light to the eye that man has ever discovered. It's like having sunlight at your command in every room in the house and in the barns, too.

And Union Carbide feeds the kitchen gas range as well. A clean, cool kitchen will please your women folks.

Talk to some of your neighbors who use Union Carbide. They'll tell you you can't afford to be without a Carbide gas plant.

Remember that only Carbide Gas brings both city lighting and city cooking comfort to the farm.

Read the following carefully and think it over.

Why Carbide Gas Has Been Used for Lighting and Cooking for Twenty Years

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|--|--|
| 1 Carbide gas is made automatically—requires only carbide and water. | 11 Requires very little room. |
| 2 Nearest light to sunlight. | 12 Needs attention but a few times a year. |
| 3 No expert attention needed. | 13 Costs nothing to operate when not in use. |
| 4 A year's supply of Union Carbide hauled in one trip from town. | 14 Seldom needs repairs. |
| 5 Any house, new or old, easily equipped for gas lighting and cooking. | 15 Every room has its own bright light. |
| 6 Burns clean without soot or odor. | 16 No carrying of lights from room to room. |
| 7 Cooking flame the hottest known. | 17 Gives sun-like light in barn and other buildings for early morning and late evening chores. |
| 8 Increases property value more than its cost. | 18 Saves all the daily labor of refilling and cleaning lamps. |
| 9 Carbide gas the only artificial farm fuel for both lighting and cooking. | 19 Saves carrying wood into kitchen and ashes out. |
| 10 Plant easily installed. | 20 Keeps the kitchen cool in summer. |

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My Vacation in the National Parks

[CONTINUED FROM PAGE 19]

50 feet in the air. Practically all of its mountains are snow-capped.

Sequoia National Park, also in California, has more than one million sequoias within its borders. Twelve thousand of these great trees range from 10 to 36 feet in diameter. The famous General Sherman and General Grant trees are in this park.

Washington has Mount Rainier Park within its boundaries. Mount Rainier itself, which towers over 14,000 feet above Puget Sound, is an extinct volcano which carries on its sides 28 glaciers.

In Oregon one finds beautiful Crater Park in the heart of the Cascade Mountains. The mammoth crater of this old volcano is filled with water, and reaches 2,000 feet in depth. It has no inlet, nor is there any visible outlet; but the water is supposed to be carried off by an underground channel to a river a few miles away.

Ages ago, it is believed, the earth's crust in what is now northwestern Montana cracked, and that one side thrust up and overlapped the other. This gives us the wonderful formations now found in Glacier Park. It has massive, beautifully colored walls of rock thousands of feet high, and more than 60 glaciers feed hundreds of lakes and streams. At one of these lakes, in late August last year, I saw great pieces of ice drop off and float as icebergs on its surface. A stranger whom I met at this place said to me with reverence in his voice: "I've seen the Alps, but this view"—he pointed down toward Swiftcurrent Valley—"makes them fade to insignificance."

Colorado has two national parks, the Mesa Verde and the Rocky Mountain. The former, with its well-preserved ruins of the cliff dwellers, and the latter, with its snow-crested mountains and charming valleys, make it well worth while to visit them.

As for the Grand Canyon of Colorado, located in northwestern Arizona, little needs to be said. It is one of the most surprising phenomena in nature, and one of the most colorful majestic sights of the world. One has not seen America unless he has seen the Grand Canyon.

ALL of these parks are easily accessible by either railroad or highway. The U. S. Department of Interior administers the park, and each one is in charge of a resident supervisor who has under his direction enough park rangers to protect the forests from fire, the wild animals from the sportsmen, and the visitors from harm. Splendid main roads are an attractive feature to the motorist, and there are good hotels or public camps, or both, where the traveler may stay as long as he desires. I have stayed at both the hotels and camps, and my opinion is that the folks who choose the camps usually have a more friendly and enjoyable time. At the camp one is assigned to a tent, which has a comfortable bed, a stove, wooden floor—in fact, all of the comforts and conveniences of a hotel except that the roof is of canvas instead of shingle. The meals served in the large dining-room, while not fancy, are quite substantial. Those who go through the parks in their own cars, however, can choose certain sites where good water is available, and there make a very comfortable camp.

It is well to remember the distinction between national forests and national parks. The national forests cover a vastly greater area than the parks. They were created so as to control the lumbering and grazing interest for the benefit of all people instead of the few. In short, the national parks are not properties in a commercial sense, but natural reservations for the rest, recreation, and education of the people. I do not mean that the national forests are not used as playgrounds, for to a certain extent they are, but they have not been developed to the extent of our national parks. In a future article the national forests will be discussed at greater length.

As to equipment and costs for a motor trip through any of our national parks, I can add but little to the suggestions contained in an article entitled, "What We

Take and What We Do When We Go Summer Touring," by Mr. Bert Highlands on page 12 of FARM AND FIRESIDE for April. However, I would like to emphasize the necessity of taking light-weight woolen or heavy cotton underwear. You will find wool much preferable, as the weather may be quite warm on the lower levels but cool and even cold on the summit of the passes. Then, too, the mornings and evenings are always cool. If one desires to buy special outing clothing, khaki is most economical and serviceable. It is light in weight and, being tightly woven, keeps out the wind, and to a limited extent will shed water. For either horseback riding or walking, khaki riding breeches are recommended for both men and women—in fact, the skirt was the exception rather than the rule among the women-folks on most of the riding or hiking trips.

Nothing is more unfortunate or painful than uncomfortable shoes. Be sure to take stout shoes or tramping boots that have medium thick soles. Steer clear of new shoes if possible. Canvas leggings or leather puttees, an old pair of gloves, a comfortable soft hat, and a heavy outer wrap, such as a mackinaw or a sweater, will complete the outfit. The hotel stores in the parks carry a complete line of clothing at very reasonable prices, but your own old comfortable clothing

will go far toward making your trip enjoyable.

There is one picture of my trip last summer that my memory will long retain. It was on a warm September day in the Pike National Forest that we stopped at a spring by the roadside for a drink and to stretch our weary legs. As we stood in the shade of a big yellow pine, we heard the desperate chugging of a car, and presently, around the curve, came an ancient, dusty, clattering, coughing flivver. It pulled up alongside, gave one or two jerky sighs, and stopped. One side was strapped a tent and poles; on the other, boxes of cooking utensils and food, while on the back hung a rickety crate containing eight or ten chickens. Two of the tires were good, a third one flat, while the other one, sans inner tube, had its casing stuffed with rags. Out of the bedding piled in the back seat tumbled two boys and a girl, the eldest not over twelve, and the youngest could not have been over eight. They were tow-headed youngsters, their skins tanned to the color of coffee berries, and seldom have I seen children so full of life. We discovered that the family lived four miles out from Girard, Kansas, and that they had been taking a three weeks' vacation trip. We chatted a few minutes, and as we started on he shouted above the din of the children: "Luck to you! If you have as good a time as we've had you'll have the time of your lives."

I AM back in the noise and grime of the city once more, but the picture of that happy family, with the battered, rattling, wheezing car in the shade of the big yellow pine, has recurred and refreshed me often. As I wait on street corners for the long line of luxurious limousines with their fat, thin, florid, pale, careworn occupants to pass, I am always carried back to that September day in the Pike Forest. I can hear the laughter of children, and I can feel the breath from the pines. And as I ponder over the problems of wealth, position, happiness, health, and the myriad of other things, I often think of the words from a song of David:

"I will lift up mine eyes unto the hills, from whence cometh my help."

It is then that I understand.

NOTE: If you are planning a trip to the national parks this summer, and want further information concerning any one or all of them, if you will write the Editor of FARM AND FIRESIDE, 381 Fourth Avenue, New York City, we will be very glad to give you the benefit of our experience.

The National Park Service of the U. S. Interior Department at Washington, D. C., will gladly furnish you with descriptive bulletins concerning any of the parks you may plan to visit.

THE EDITOR.

Johnson's Car Savers

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START today to reduce the depreciation of your automobile. You can do it yourself with but very little effort. An hour or two a month and JOHNSON'S CAR SAVERS will prove their value in dollars and cents when you come to sell or turn in your car.

There is a JOHNSON CAR SAVER for every purpose. No experience is necessary for their use—they can all be applied by the amateur with perfect satisfaction.

Johnson's Radiator Cement—in liquid form and easy to use. Will ordinarily seal leaks in from two to ten minutes. All you have to do is remove the radiator cap and pour it in. Half-pints—75 cts. in U. S. East of Rockies.

Johnson's Black-Lac—a perfect top dressing. One coat imparts a rich, black surface just like new. Easy to apply—dries in fifteen minutes—is permanent, water-proof and inexpensive. Half-pints—75 cts. in U. S. East of Rockies.

Johnson's Stop-Squeak Oil—penetrates between the spring leaves thoroughly lubricating them. Simply paint it on with a brush or squirt it on with an oil can—you don't even need to jack up the car. Reduces the liability of spring breakage. Half-pints—35 cts. in U. S. East of Rockies.

Johnson's Cleaner—for body, hood and fenders. It removes spots, stains, tar, alkali—preparing the surface for a polish. Contains no grit or acid. Half-pound cans—35 cts. in U. S. East of Rockies.

Johnson's Prepared Wax Liquid—for polishing body, hood and fenders. Imparts a hard, dry, glass-like polish which does not collect or hold the dust. Preserves and protects the varnish. Half-pints—50 cts. in U. S. East of Rockies.

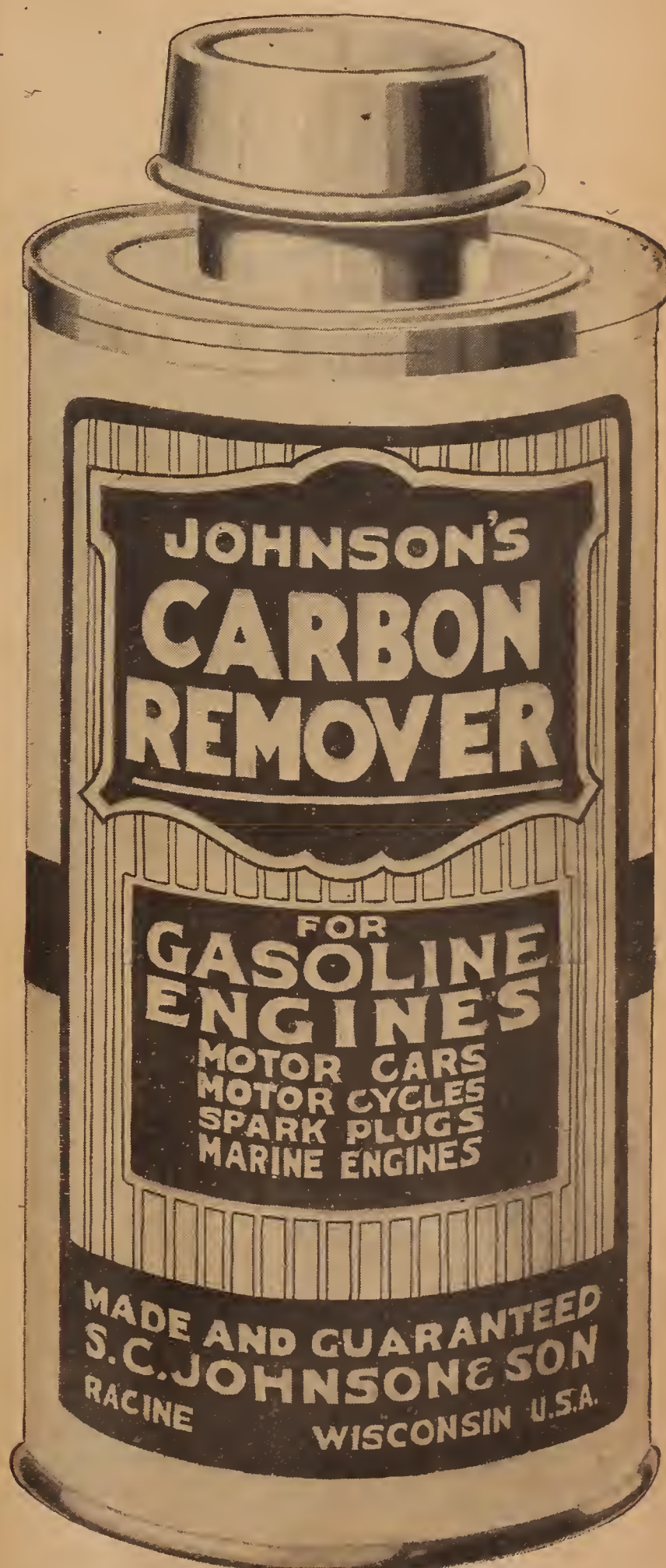
Johnson's Auto-Lak—an automobile body varnish that amateurs can use successfully. Goes on easily and quickly—you can finish your car one day and drive it the next. A pint is sufficient for varnishing a roadster. Pints—\$1.50 in U. S. East of Rockies.

Johnson's Hastee Patch—a quick and permanent repair for tubes, casings and all rubber goods—rubber boots, rubber coats, garden hose, auto tops, etc. A box in your car answers the purpose of two or three extra tubes and casings. Small Size—(enough for twenty-five average patches) 50 cts. in U. S. East of Rockies.

Johnson's Valve Grinding Compound—will remove pits and foreign substance from valves giving a velvet seat. 4 oz. Duplex boxes—45 cts. in U. S. East of Rockies.

Insist upon your dealer supplying you. Write for our booklet on Keeping Cars Young—it's free.

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Johnson's Carbon Remover—an easy, clean, safe and satisfactory remedy for carbon. It will save you from \$3.00 to \$5.00 over other methods without laying up your car. You can easily do it yourself in ten minutes—without even soiling your hands—and the cost is trifling. Half-pints—75 cts. in U. S. East of Rockies.



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Let's Tell Them the Truth!

(CONTINUED FROM PAGE 5)

way, the brown soil and its constituent elements are transmuted into human food, the plain men who live in the fields are the ones.

We are not going to have a strong, vigorous national program of health and happiness for all unless we work together to make it possible. Berating the farmer because food is high will not make it low. Character and happiness and morality and peace are not the results of law. They are rather accomplished only by a wide co-operation among men who, pursuing perhaps separately their several tasks, yet spell out the same results.

No more dangerous thing can happen than that through some misunderstanding we should find ourselves some day in want. Our Lord's petition, learned at our mothers' knee, has as its first request the gift of "our daily bread," and, whether we are pious enough to recognize its Giver or appreciative enough to be thankful, it is still our first great need.

In rich America we should ever have food enough and to spare, but food means labor. The toil and the sweaty brow still remain in the formula, and though skill has seemed to lessen the actual muscle required, yet no genius or human mind has yet discovered a way to get wheat to grow and tares to remain dormant. Getting something for nothing has not worked for long in any walk of life, and the abandoned farms and the impoverished fields are mute evidences of the attempts of the husbandmen to get a maximum of return with an inadequate appreciation of the to-morrow.

When a country is new and its virgin soil fertility unexhausted, it seems but natural to take the easy return without thought of a day when the soil would itself reprove the unthinking profiteer who took from it for present advantage that which another must restore.

Our city-bred boys of the present know nothing of the problems, and our country-bred boys of a few years ago who have since lived in the city know but little more. The whole economic situation has changed in the country, and the man who once lived on a farm, when perhaps the problems of soil fertility, insect pests, plant diseases, and the whole gamut of farm problems were not so large a factor, knows little of the real problems of the farm today. That interesting individual known as the "hired man" is nearly an extinct species.

The country boy *does* "know all about farming;" that's why he isn't there. He has gone to the city to find how or by what mysterious alchemy his dad's dollar-a-bushel apples become 10 cents apiece when you buy them in the city. He gets the idea that dimes come easy in the city, though so hard in the country.

When our friends of the city figure backward they begin with the prices they pay, and by a hasty conclusion think that the man who produces the stuff they buy must be a millionaire, for what would not some of these fine up-state orchards produce at 10 cents per? Well, if you stood at the

mouth of the Great Father of Waters, the Mississippi, you might imagine it came from some mighty spring or great inland sea, little knowing that at last its source is lost in the trickling rills up near the Saskatchewan divide.

If the fact that we were simply under-producing was all there was to it, we might not be so concerned. If, like a factory, we could speed up, we might relieve the shortage. But when the operatives are going away, when the factory itself is being spent and no care being had for its permanent upkeep, when the materials from which its products are made are being spent, when the skilled and keen are tempted to other more attractive lines, and the whole output seems permanently diminished in face of an increasing demand for a product

without which the nation cannot live, the whole matter becomes one not for the concern of the few, but must challenge the best thought of the whole.

The men of the fields see these things. Those in our big cities do not. Food always has come. They think it always will.

We had great forests once. The mills have eaten away the timber lands. Our coal fields seemed as inexhaustible as the

woods which covered the country. They show signs of a lessened supply. The oil and gas fields have been tapped and drained in a lavish manner to supply our ever-increasing demand for luxurious living, and the end is now in sight.

Will we use the coal remaining to aid us in digging the races and erecting the dams for harnessing the natural water power of the land before it is exhausted, or must we do it by hand or freeze or return to the oil lamp for our light?

Will we husband the soil fertility and keep in health the land to the day of future need, or will we go on harassing Mother Nature to supply the luxuries more than the necessities of life until she refuses her accustomed yield?

Who shall answer? Well, no one can better than the farmer. He knows.

THESE challenging economic problems must not be neglected by those who would safeguard the future, and no one is more patriotically interested in that future than our farmers.

We will not better conditions by the fostering of class prejudice or the widening of misunderstanding, which at present exist.

We must go to the city man and give these facts to him. We must explain as a father patiently explains the letter blocks to his boy.

We will go not to preach nor to storm; not to rail nor to denounce, but to *explain*. This seems to us a good program, and one that the farmers of every State in the Union can use to good advantage.

NOTE: All letters of inquiry concerning this campaign and asking how it can be organized in your community should be addressed to Mr. Strivings, care of FARM AND FIRESIDE, 3-1 Fourth Avenue, New York City, and they will be promptly answered.

Mr. S. L. Strivings was born in 1865, and reared on a farm in New York State. He has been prominent in agricultural affairs of the Empire State since a young man, and has occupied positions of trust in the Grange, the Wyoming County Agricultural Society, Federal Food Administration, and the local and state farm bureaus. In November he was elected temporary vice president of the National Farm Bureau Federation, and last week was made permanent vice president of this organization. He is also president of the New York Farm Bureau Federation.

Take the Backache Out of Wash Day

By having a Meadows Safety Electric Washer do all the hard work—it washes better, cleaner and in less than half the time it takes to wash by hand.

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TRADE MARK REGISTERED

A Meadows Power Washing Machine makes wash day a pleasure; and

profitable, too. No wear or tear on the clothes. Swinging reversible wringer wrings clothes from washing machine, rinsing or blueing water. Absolutely safe. The foot pedal control enables you to stop the wringer instantly. This exclusive feature alone puts the Meadows in a class by itself.

Write for illustrated literature which proves that the Meadows is the most economical machine to buy and the most economical to use.

The Meadows Mfg. Co.
110 Main Street Pontiac, Ill.



Our Tractor Expense

I AM especially interested in power farming, and I think your paper is right in encouraging it and explaining it from the farmer's viewpoint, as I find there is a great deal of unjust criticism and a great many false notions about tractors.

My father owns and I drive a tractor (11-22 horse power, F. make). We keep exact account of all work done, and all expenses.

We received our tractor in July, 1918, and since then have plowed 60 acres, disked 118 acres, harrowed 45 acres, and cut 35 acres of wheat, besides doing considerable scooping and pulling out rock. All this has taken 315 hours of work, and has cost exactly \$211.63 for fuel, repairs, etc. The expenditure for tractor, necessary implements, etc., was \$1,258.88.

Of this, \$211.63 went for fuel, repairs, oil, and all other necessary expenses to keep

tractor in best of running order. We have earned \$143.60 by doing work for neighbors at the price they would pay to get it done by horses, so that it has only cost \$68.03 to do all our heavy farm work on a 120-acre farm since July, 1918.

The tractor is running as good as the day it was bought, and will to all appearances keep it up for many years to come. Besides all this, it has saved the expense of at least one team of horses and extra farm implements which would have been necessary were it not for the tractor. Also, we get our work done when it should be done, and done right too, which means better crops and more savings.

With all these things taken into consideration, is it any wonder that we boost the tractor and that several of our neighbors have bought tractors too, after watching one tried out on an average farm, under average conditions, and with an average driver? **ERNEST J. DOWNING, Ohio.**

The Hoover lifts the rug from the floor, like this—flutters it upon a cushion of air, gently "beats" out its embedded grit, and so prolongs its life



Moths are unable to indulge their expensive appetites in the depths of the rug that is frequently beaten by The Hoover. Those which burrow deeply to feast or to deposit their eggs are speedily removed, together with all destructive, embedded grit. Besides beating, The Hoover swiftly sweeps up all stubborn litter, rights crushed nap, renews colorings and suction-cleans. Only The Hoover performs these essentials. And it is the largest selling electric cleaner in the world.

The HOOVER

ELECTRIC SUCTION SWEEPER

It Beats—as it Sweeps—as it Cleans

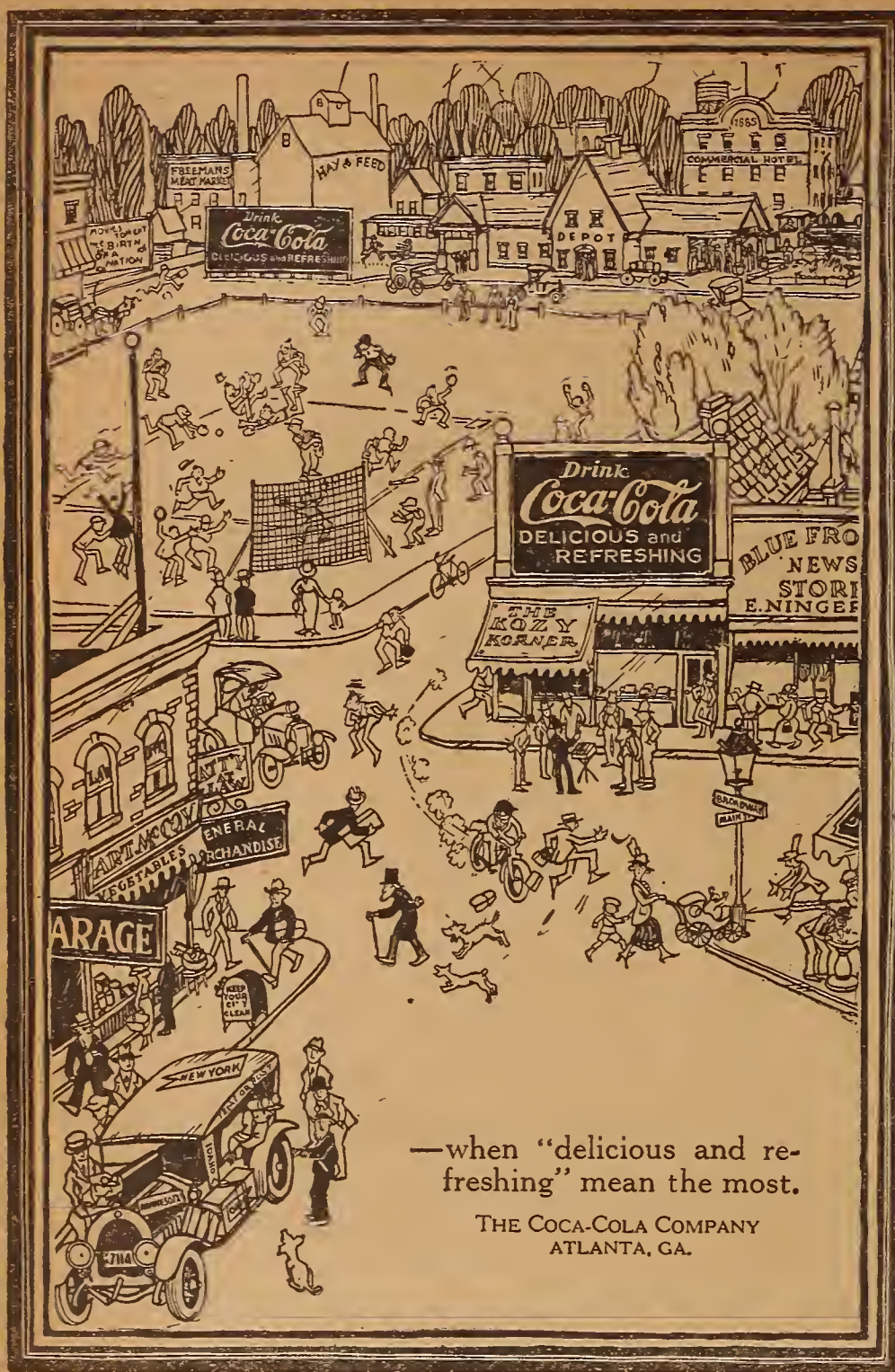
For operation on private electric plants The Hoover is equipped with low voltage motors. Write for booklet "How to Judge an Electric Cleaner."

THE HOOVER SUCTION SWEEPER COMPANY

The oldest makers of electric cleaners

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An Evening Full of Puzzles

By Emily Rose Burt

IT WAS a big party; forty people came. In the first place, everybody was expected to puzzle everybody else by wearing a false face. Ladies with leering pirate masks, boys with patriarchal Santa visages appeared, and all sorts of character faces were queerly hitched to everyday folks in party clothes.

After an ice-breaking amount of guessing as to who was who, the masks were ordered removed and people proceeded to the evening's amusement. There were ten tables scattered through the large rooms. Everybody was given a score card with a gay red sphinx sketched in brief at the top, and just below was the number of one of the tables and its name. The various tables had titles, as well as numbers. These followed in a column:

Five Dots
Hieroglyphics
Chase the Cootie
Epistles
Straightening the Pi
Jigs
In Japland
Acrostics
Help the Blind
The Links

The puzzlers at each table moved on in succession to the next table—two going to the next number above and two to the next

the preceding, a three-minute letter. That, then, was folded under, and the sheet passed on to a third, who wrote the subscription, "Affectionately yours," "Gratefully," and so on. The fourth person, in turn, wrote the signature.

The results were puzzling and funny. For example, one letter read this way:

To Secretary Daniels:

DEAR SIR: Mother wishes me to thank you for the darling little hankies you sent for her birthday. She just knows you embroidered the initials yourself, and did that cunning picot edge, and you're so busy too.

Good-by old scout,
CHARLOTTE BRONTE.

The person having started the funniest letter won here.

STRAIGHTENING THE PI: To every player at the table was handed an envelope containing the cardboard letters (from a set of anagrams) of a certain word. The puzzle was to form the word—or, in printer's terms, to straighten the "pi." Here speed gained one the winning mark.

JIGS: At this table four different jig-saw puzzles were put together. Speed again determined the winner.

IN JAPLAND: An assortment of those fascinating little Japanese puzzles was offered. Most of these are made up of wooden blocks which must be fitted together just right,



The boys had great fun guessing whose fist was whose

table below, as everybody wanted a chance to try all the stunts.

The winner at each table was posted by an umpire, in view of a prize to be awarded at the end of the evening's amusement.

FIVE DOTS TABLE: Each person was handed a sheet of paper with five large black dots sprinkled over it at random. The puzzle was to draw a figure, the five dots respectively determining head, hands, and feet. The figures drawn were garbed in a number of different ways—policemen, nursemaids, babies, fashionable ladies, acrobats, Indians, and so forth.

On the same sheet an irregular curved line was supplied, and this was to be used in some way as the keynote of the picture. Thus a line with a double curve might be incorporated in a picture of a swan, a snake, a flag flying in the wind, a flowing stream, and so forth. The person drawing the cleverest pictures won a mark.

HIEROGLYPHICS: The words of a familiar rhyme written out on a slip of paper were handed around, and each person was asked to translate it into hieroglyphics. As that means picture words, the idea was to draw a picture for every word possible in the rhyme, connecting the pictures with the words unpicturable. Mother Goose rhymes or some of Riley's, Field's, or Stevenson's are suitable for use.

CHASE THE COOTIE: This is a box containing a cardboard yard the chief feature of which is a little wire pen with an opening at one side. There are three lead slugs rolling about in the box, and the idea is to cage them all.

EPISTLES: This was a variation of Consequences. Each person wrote at the top of a sheet of paper the address and salutation of a letter, choosing any name he wished from public or private life. A real person should be chosen. Then, folding this part under, he passed the sheet to the next person, who wrote, without looking at

either to form a cube or a solid cross. Others are quaint painted wooden figures which fit one inside another.

ACROSTICS: Everybody received a sheet of paper with the word "sociable" written with the letters under each other.

The instructions were to write words beginning with each successive letter of the word, the initials forming the word. These words, it was specified, must be on a sociable subject.

A typical answer was as follows:

Society
Ocean voyages
Clubs
Inns
Automobiles
Butterflies
Laughing
Eating

HELP THE BLIND: This was simply trying to roll two lead shot eyes into place in a cardboard-box face.

THE LINKS: Chain puzzles which were to be unlinked in some mysterious way were passed around the table. These are of nickel, linked together in several curious ways. The problem is to get the links apart.

The prize for the highest score of puzzle solutions and contest-winning was a famous puzzle book.

Sitting at the tables doing puzzles proved too quiet to be satisfying to some of the gayer spirits, so a few puzzling stunts of a livelier sort were tried. For instance, all the girls stood in a row behind a curtain in which slits were cut for the purpose of extending their closed fists. The boys guessed whose fist was whose; identifying rings, of course, had to be previously removed. The same stunt could be tried reversed—the boys submitting their hands.

As a variation try noses or eyes or feet.

[CONTINUED ON PAGE 41]



Send for this New

STANLEY SCREEN HARDWARE BOOK

Buy new SCREEN HARDWARE this year, it will brighten and strengthen your old window screens and doors.

What is more annoying than a rusty hinge on a door? This can be avoided when you purchase Stanley Works Screen Hardware which is durable and practical.

Your dealer carries this hardware. Talk it over with him, also write for a Screen Hardware Book FF4.

THE STANLEY WORKS
New Britain, Conn.

New York Chicago



How I Made Life More Livable on Our Farm

First Prize
Winner: Alice S. Rush
New Florence, Pennsylvania

Second Prize
Winner: Mrs. T. L. Powis
Homewood, Illinois

EVER since I can remember we had carried all our water from the spring, a good six rods from the door. Now, when we multiplies the number of steps taken each day by the amount of water a family of six can get along with the result is amazing, to say nothing of the ache in shoulders. Things went on until I felt I could no longer endure it, then we discussed ways and means, and finally decided we could afford an improvement both in the kitchen and the barn.

Our spring was a wonderfully good one. It had never failed and was famous for its purity and coolness. First we made a water-tight box, and cemented it in place underneath the stream as a catch-all. We then piped the water from the box down to the barn, where a huge concrete and cement tank received it. Next we tapped the pipe opposite the kitchen, and ran a branch pipe to the cellar, where another tank similar to that in the barn waited.

Success crowned our effort, for by installing a sink and waste drain and a small pump of the pitcher variety we had the thing right in the kitchen.

My work was, I believe, cut in half, and I am younger than I had for years. Things went along in fine shape until old Hardwick came along and stopped with us for a spell." One day, several months after our improvement, we noticed a peculiar, sour taste to the water, and a little later a gummy feel to the dishcloth, which no soap could neutralize.

The worst had happened! We discovered that the vein of coal which protected our spring had been disturbed by a coal company whose coal claims adjoined that of our spring hill. Back to the old badger! How could I?

But back I went, and it was much greater now, as the well drillers insisted that our well must be drilled a place three times the distance of the former spring. I had years depended on the "old rain barrel" to help me out, and one day, as I watched a great stream of wonderful, soft water going to waste after filling my barrel, an idea popped into my head, and I could scarcely wait to try it out.

As soon as I could manage, next day, I had our local tinner make me a large rain-er-shaped receptacle with several feet of spouting attached. This I secured only to the house, directly underneath the rain spout, where the rain barrel had stood. I then chiseled a hole in the cellar wall large enough to insert the spouting, and, presto, I had a cistern.

All I needed now was a strainer cloth for the rain spout and a big rain. I had my wish, for in a few days a rain came and completely filled my tank. I surely was, and am, proud of my labor saver, for with 200 gallons of soft water down cellar, and my little pump to carry it up, my housework is lightened more than one half.

Some day we mean to install an electric pump, and have the water pumped all rough the house, but until then I am perfectly content with my "little old convenience."

WASHDAY used to be, and to some still is, blue Monday, but with modern conveniences the "blue" is pretty well rubbed out of it. So I have found it, anyway.

Some years ago we bought one of the new old-fashioned hand-power washers. This machine was evidently designed for a mule to work. Certainly, no human arms could stand it long, and life was too short to spend tugging at that particular contrivance. I do not say that all hand washers are or were like that one, but mine surely was next to useless, and soon went the way of useless things.

Then came the real power washer, a new-fangled idea that ran with a gas engine. Certainly, if any work ought to be done with an engine it is washing clothes, so we bought one of them, and with it—exit blue Monday.

Ours is a two-tub machine, and while one tub is being emptied and refilled with clothes, the other is working away cheerfully and tirelessly.

But the real improvement that has added greatly to the value of my outfit came in connecting up the tubs with hot and cold water, thus doing away with all water-carrying, which really was the only work of washing with the power washer. The man of the house connected a pipe from the cold-water supply to the tub, and to this pipe also connected a pipe from the hot-water boiler. The result is that by the turn of a valve either tub can be filled with hot or cold water.

The waste water is run by a pipe into the outlet drain, and the tubs are thus as easily emptied as they are filled. The pipes are connected with regular tank couplings.

The time and labor saved by this simple arrangement, at a cost of only a few dollars, has added to the value of the washing outfit, and has made life more comfortable and wash day less to be thought of as a day of sloppy suds and hard work.

The washing machine, of course, has to be made stationary, but since wash day comes once a week, at least, and the tubs have to be used just that often, they may just as well have their place and be fastened into it.

Third Prize
Winner: Mrs. May Wilson
Moore, Montana

IN MY eighteen years of married life I have never had quite so much work to do as at the present time. With the aid of modern conveniences I do all the work for my family of three, and two hired men. I have an eight-room house, two bathrooms, and full basement. Up until the war began I kept a hired girl all the time, and worked all I could myself, and we could scarcely keep the same amount of work done that I do alone with the aid of modern conveniences.

I have had installed in my home the following: First, a hot-water furnace system.

[CONTINUED ON PAGE 41]

Cable Design in Filet Crochet

FC-123

COMPLETE directions for this pattern, attractive for pillow slips and towels, will be sent on receipt of four cents in stamps by the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio. Order No. FC-123

"HIS MASTER'S VOICE"

REG. U. S. PAT. OFF.

AND

"VICTROLA"

REG. U. S. PAT. OFF.

These famous trademarks identify all our products

They are the public's guarantee of origin—and so of quality and artistic leadership. They assure to the public what Caruso's name assures to opera-goers—the absolute certainty of hearing the best.

Victor Talking Machine Company

Camden, New Jersey

Let Me Save You

\$10 to \$40

on the most beautiful range ever made. I can do it. Send for my big catalog—get wholesale "Direct to You" factory prices on stoves, ranges, furnaces, oil and gas ranges, refrigerators, washing machines, etc. Quick shipment. Cash or easy payments. Write today. Ask for Catalog No. 183

A Kalamazoo

Direct to You

KALAMAZOO STOVE CO. Manufacturers KALAMAZOO, MICH.

MENDETS—WONDER MONEY MAKERS

mend leaks instantly in all utensils, hot water bags, etc. Insert and tighten. 10c and 25c a package, postpaid. Agents Wanted. Collette Mfg. Co., Box 704, Amsterdam, N.Y.

Dye Old, Faded Dress Material

"Diamond Dyes" Make Shabby Apparel Stylish and New—So Easy Too

Don't worry about perfect results. Use "Diamond Dyes," guaranteed to give a new, rich, fadeless color to any fabric, whether wool, silk, linen, cotton or mixed goods,—dresses, blouses, stockings, skirts, children's coats, draperies,—everything! A Direction Book is in package. To match any material, have dealer show you "Diamond Dye" Color Card. Wells and Richardson Co., Burlington, Vt.

Don't Guess! Know!

This world is filled with a lot of people who have a habit of "passing up" a good thing. On the other hand there are those with the determination to let nothing get by, and who profit as a result of ever being on the lookout for the right opportunity.

\$50 to \$65 a Week

There are many men in our organization who are earning splendid salaries. They are doing so because they recognized a good opportunity and are now making the most of it. We still have a few more openings and we would like to hear from those who really want to work at their best and make good.

Sales Manager
Farm and Fireside Springfield, Ohio

Your Choice!

The Comfort, Quality and Style of this beautiful Oxford makes it the most wonderful Dress Shoe Value ever offered. Your choice of black or tan, in either military low or French high heels. Direct to You from the Shoe Style Center of America. Send for a pair ON APPROVAL. Simply mail coupon. Do not pay a penny until they arrive. Compare them with shoes sold elsewhere at \$8.00 to \$10.00 a pair. Try them on in your own home. Enjoy their blessed comfort! Your friends will instantly recognize their good taste and smart, snappy style. Postage FREE.

Send No Money

If you are not delighted with these wonderful shoes, they will not cost you a penny—Send them back at our expense.

\$4.85 on Arrival You Risk Nothing!

-----MAIL COUPON TODAY-----

BOSTON MAIL ORDER HOUSE, Dept. 985
Essex P. O. Bldg., Boston, Mass.

Send shoes ON APPROVAL. I will pay only \$4.85 on arrival.

☐ Rich Dark Tan, Low Heel ☐ Rich Dark Tan, High Heel

☐ Dull Black Kid, Low Heel ☐ Dull Black Kid, High Heel

Name..... Size.....

Address.....

5 BIG NEW FEATURES

Make this wonderful new Liquid Veneer Mop far superior to any other mop for cleaning, polishing and beautifying all painted and varnished floors. It is treated with Liquid Veneer, famous for making pianos and furniture look just like new.

LIQUID VENEER MOP

The removable swab is a great improvement. When mop becomes soiled, swab may be pulled from frame, like a curtain from a rod, washed, put through wringer, dried and slipped back on frame. Treat it with Liquid Veneer and mop is like new again.

When swab wears out, separate ones may be obtained at moderate cost. Keep the frame, thus saving expense of buying complete new mop.

Try this wonderful mop. Oh, but it's a beauty and it does such marvelous work on floors, removing every bit of dirt, polishing and renewing, all without a trace of grease.

At all dealers. \$1.50 complete. Sold on approval.

Buffalo Specialty Company
311 Ellicott St. Buffalo, N. Y.

NOTICE: Have you tried Liquid Veneer? If not, send for liberal trial bottle and story of the \$100,000 World Champion Cow, all free.



School of Nursing OF UNIVERSITY OF COLORADO, BOULDER, COLO.

Theoretical and practical teaching is offered which will fit a young woman to fill the numerous positions open to graduate nurses. Write for circular.

Lift off Corns with Fingers

Doesn't hurt a bit and "Freezone" costs only a few cents.



You can lift off any hard corn, soft corn, or corn between the toes, and the hard skin calluses from bottom of feet.

Apply a few drops of "Freezone" upon the corn or callus. Instantly it stops hurting, then shortly you lift that bothersome corn or callus right off, root and all, without one bit of pain or soreness. Truly! No humbug!

Tiny bottle of "Freezone" costs few cents at any drug store

How Much Do You Know About Taking Care of Babies?

THIS month marks the end of the first year of Better Babies service in FARM AND FIRESIDE, and we feel sure that each of you Bureau members will be interested in hearing how many others, besides yourself, are anxious to gather in all the knowledge available as to just what they should do in order to have Better Babies.

According to the very latest report there are 959 women who have joined our Expectant Mothers' Circle, and are receiving from Mrs. Benton, the counselor, those inspiring monthly letters of suggestions and advice, together with the several little leaflets of ideas for maternity dresses and for a common-sense layette. And all letters coming in to Mrs. Benton tell of the wonderful help she has given, and fairly overflow with gratitude.

There are 245 women in the Mothers' Club who are receiving, each month, helpful ideas as to what Baby should wear, what eat, and when sleep, so that he or she may grow into a happy, robust, rollicking youngster. Letters that arrive from these mothers lament the fact that there is not another club to carry them on through the second year of Baby's life.

The following are a few letters that may give you who aren't yet "of us" an idea of what these mothers and expectant mothers who know us think of the material they're getting:

I WISH to tell you how pleased I am with your very prompt acknowledgment of my letter asking you to join the Expectant Mothers' Circle. I have read and re-read the printed matter you sent, and will be looking forward eagerly to the time when more comes. I have read a good deal on the subject, but your data is all so clear and concise, and covers the ground so well, that I think I shall rely on you exclusively—supplemented, even as you suggest, by my doctor and my nurse, whom I chose at the very beginning.

I am sending for some of your patterns, and hope to have all my sewing done and be ready for my baby two months ahead of time.

This will be our first baby, and its coming will be a very great joy to us, for baby's father only came back from France last spring, and Baby's coming is only increasing our joy and helping us to forget the long separation when my husband was in the army.

Mrs. F. D. W., N. Jersey.



One of our "better tomboys"

A young Arizona rancher and a Better Baby



I WANT you to know how much good your letters do me. The instructions are so clear, and the letters are so cheerful, I can hardly wait until the next one comes.

I have followed your advice carefully, and it surely has saved me a great deal of worry and expense.

I am very fortunate, for I have not experienced the least illness since becoming pregnant. I have always been able to do my own housework and have enjoyed it.

Of course, there are just the two of us, and we live in town, but there is considerable light work. I do no heavy or pulling work, and several times a day I lie down for a few minutes. I find this rests me wonderfully.

My appetite has been normal from the beginning, and I haven't suffered at all from "morning sickness."

I expect the baby in just two months, and am looking forward to the time eagerly. I am not nervous nor a bit worried.

My husband and I go walking nearly every night, and I play the piano and read a great deal. The books you suggested are excellent.

I must close, but I wanted you to know how much I appreciate your help. Please accept my sincere thanks.

Best of wishes for greater success.

Mrs. G. R., Nebraska.

WOULD it be possible and convenient for you to send me another letter for the ninth month? The one you sent was lost through my changing my address, and I seem lost without the very helpful letters from you each month.

I am beginning to substitute other foods for the breast feedings, as you advised in the seventh-month letter, and our baby is doing wonderfully well. He is fat and rosy, and just as sturdy as he can be. He has never been sick a day, and I am a firm believer that prevention is better than a cure.

I am dreading to think that in just a few more months your very needful letters will cease, and I am sure I shall then feel like a boat without a rudder—having learned to depend upon your splendid advice and good suggestions. You may be sure all those letters could not have been more appreciated and more carefully followed than by me.

I am hoping that, when the year is up, you will still let me call upon you for advice.

Mrs. T. W. P., Pa.

What the Better Babies Bureau Is And how to secure its help

THE EXPECTANT MOTHERS' CIRCLE: Any woman eligible may become a member, receiving each month a letter of advice on the care of herself and the preparation for her baby. Several practical little pamphlet circulars showing designs for maternity dresses and a common-sense layette are some of the helps sent with the letters. No matter at what period you enter, everything from the first month will be sent. No mention of the Better Babies Bureau is made on the envelopes in which the material is mailed. Enclose a self-addressed envelope with Fifty Cents in stamps, for postage, and state what month you expect your baby.

THE MOTHERS' CLUB: Every mother of young children is eligible. Pamphlets, together with monthly letters of instruction on the care and feeding of babies under one year of age (covering such subjects as colic, constipation, weaning, teething, etc.), will be sent to any mother who sends Fifty Cents in stamps and states the age of her baby. There are also leaflets giving diet lists, and other helps for babies from one year of age to three years. This literature is all included in the Mothers' Club's monthly service, but if the letters are not desired the additional literature will be sent for Ten Cents. A self-addressed stamped envelope will bring a prompt reply to every inquiry. Address all inquiries to

BETTER BABIES BUREAU

or to Mrs. Caroline French Benton, Counselor

FARM AND FIRESIDE

381 Fourth Avenue, New York City

Mother's feet ached every night

No wonder, either. On them all day long doing things for other people. Dad brought her some

Mentholum

Always made under this signature: *A. A. Hyde*

Mother tried it—and what a relief! The ache and throb were gone and her feet felt like nineteen instead of ninety.

Now she sings all day

Mentholum is good for many other "little ills," such as cuts, burns, bites of insects, &c.

Mentholum is sold everywhere in tubes, 25c; jars, 25c, 50c, \$1.

The Mentholum Co.
Buffalo, N. Y.



"The Little Nurse for Little Ills"

TELL TOMORROW'S Weather



White's Weather Prophet forecasts the weather 8 to 24 hours in advance.

Not a toy but a scientifically constructed instrument working automatically. Handsome, reliable and everlasting.

An Ideal Present

Made doubly interesting by the little figures of the Peasant and his good wife, who come in and out to tell you what the weather will be.

Size 6 1/2 x 7 1/2; fully guaranteed. \$1.25

Agents Wanted DAVID WHITE, Dept. 15, 419 E. Water St., Milwaukee, Wis.

AGENTS: \$72 a Week

taking orders for Thomas Guaranteed Shoes for men, women and children. All styles. Brand new proposition—must wear and give satisfaction or replaced free. Cheaper and better than leather.



Flexible steel arch shank. Heel can't come off. Get started at once. No capital required. Write quick for Agency and territory. Thomas Shoe Co., 946 Long St., Dayton, Ohio



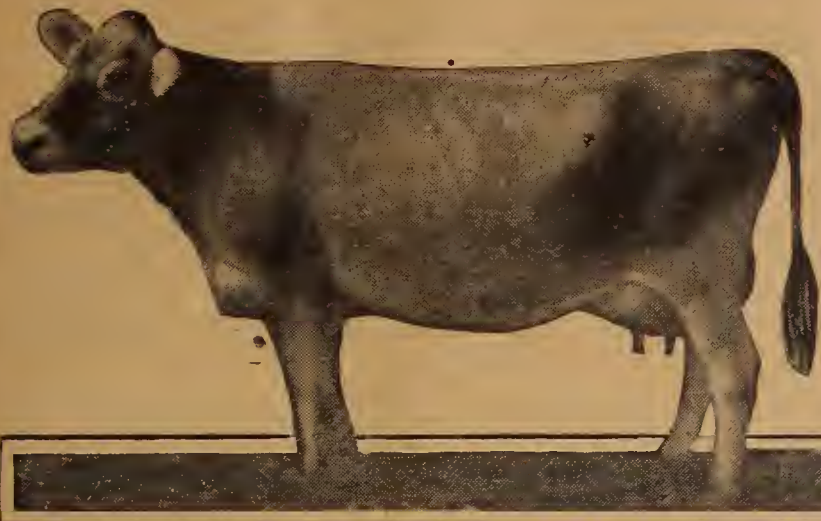
30 Days Trial The Oliver Oil-Gas Burner is an attachment that makes any cooking or heating stove a gas stove. No coal or wood. Cooks and bakes better than coal or wood in the same stove.

Makes Its Own Gas from coal oil (kerosene) at one-fourth the cost of city gas. Everybody knows gas means cleaner, cheaper, quicker cooking, and a cooler kitchen. No fires to start, no ashes, no chopping, shoveling, poking and dragging of coal. Saves hours of work and loads of dirt. No smoke nor odor. You regulate heat with valves. Simple, safe, easily put in or taken out. Simply sets on grate. No damage to stove. Lasts a lifetime. Thousands of users. In use 10 years.

SAVES MONEY--FITS ANY STOVE 16 different models, one for every stove. Write for free literature—tells how two gallons kerosene equals more than ninety-seven pounds of coal. Oliver Oil-Gas Burner & Machine Co., 2003 Pine St., St. Louis, Mo. Western Shipments From San Francisco.

AGENTS MAKE BIG MONEY. Write for Agency.

Plain Mary Wins Jersey World's Title in Spite of Handicaps



This is Plain Mary, who recently completed a test that won for her the title of World's Champion Jersey. During one year she produced 1,040 pounds of butterfat

ALTHOUGH working under adverse conditions, Plain Mary, the little cow shown above, produced during the year ending February 27, 1920, 15,225 pounds of milk containing 1,040 pounds of butterfat, thereby earning the title of World's Champion Jersey.

Mary is now owned by F. W. Ayer of Bangor, Maine, who, for a fancy consideration, purchased her from Messrs. Kelly and Cossar of Winn, Maine, under whose care she won her laurels. Mary started her record run when she lacked just one month of being nine years old.

Several times her monthly average fell below par because of sudden changes in the temperature. In June the mercury in one day registered a difference of 84 degrees, and in December she was for a time subjected to 45 degrees below zero in an unheated barn. Such changes are frequent around the Penobscot River region, where Mary was kept during her test period.

Plain Mary reverts to the St. Lambert strain chiefly. Her record is more of a tribute to official test work than to breeding, although cattle experts say she is an almost perfect specimen of the producing cow.

At present Mary is due to calve, and qualify for Class AA Register of Merit, which means a calf with each record. She has made two other official records—one of 514 pounds fat, and the other, 828 pounds. She has also had six recorded calves, putting her in the reproducer class as well as a maker of milk and butterfat records.

R. D. D.

How I Made Life More Livable on Our Farm

[CONTINUED FROM PAGE 39]

This system operates its own drafts. All it needs is coal, water, and an occasional shaking of the grates. Then we had a well put down, and an electric-light system installed. This system operates the pumps automatically, keeping the pressure up in the water-supply tank and 70-gallon range boiler. I fill the tank in the engine twice a week, and charge the batteries. This system furnishes the water that runs the twin washer, churn, separator, and grindstone.

The object in the twin washer is to get rid of boiling the clothes. I have two hot-water faucets in the basement over the washer. I fill the tubs, and while one washes the soiled clothes the other is rubbing the first washed in the hot boiling water, which takes the place of the boiling. The water is supplied from the large range boiler in the kitchen.

The electric lights, iron, vacuum cleaner, and hot plate all work by the same little electric engine and batteries. In my kitchenette I have a 10-foot wall cupboard, then a work table, and underneath are bins and drawers of different sizes, a place for the pastry board and a place for the ironing board to be put away. I have my ironing board to swing out on hinges in a little corner of this cupboard. Just over the ironing board I have the iron switch, operated by a button as are the lights. In this way you need not disconnect your iron, which causes so much burning out and carrying about. When I am through ironing I push the button, set the iron up on a wire frame, and have no more bother till the next ironing day.

Under and attached to my kitchen range I had a tin chute made, which dumps the ashes into a tin-lined half-barrel in the furnace-room. I have a clothes chute and a paper or waste chute from the hall up-stairs and kitchen below to the basement. I have a steam-pressure cooker with which I can cook enough of three articles for a dinner for five people. This I use a great many times on the hot plate. I consider the vacuum cleaner a great help, as it does away with that dreaded dirt of house-cleaning to a very great extent.

I have the sink just to the right of my work table, and the drain board in with the table.

I live ten miles from a town, and now comes the story of earning all these conveniences. I raised chickens and milked the cows, and the profits from the two gave me the money to do these things with. I have my barn, chicken house, and garage all lighted and watered by the electric plant at the house. I hope this may benefit some other overworked woman.

NOTE: Other interesting letters received in answer to this contest will be published in an early issue. Watch for them.

An Evening Full of Puzzles

[CONTINUED FROM PAGE 38]

Another jolly and mystifying amusement was this: The company was divided into trios, and each trio had to act out some Mother Goose rhyme for the rest to guess. "Three little kittens who lost their mittens" was very successful; so were, "Jack be nimble, Jack be quick, Jack jump over the candlestick" and "Tom, Tom, the Piper's son."

The refreshments partook of the puzzle nature. They consisted of little cakes, each topped with a big red frosting question mark, and tiny molds of raspberry jelly, each hidden under a mound of marsh-mallow cream.

The last thing, English walnuts were passed, and they proved to be mysterious also, for each was really hollow and contained a riddle or conundrum written out on paper.

With the asking and answering of these riddles the evening ended happily.

EDITOR'S NOTE: A set of conundrums to enclose in the walnut shells and the address of a firm where the various puzzles described may be obtained, also the name of a famous puzzle book, will be sent on receipt of a stamped self-addressed envelope. Write to Entertainment Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.



The Measure of Progress

The progress of the past, as well as that of the future, is measured by criticism—for criticism exists only where there also exists faith in ability to improve.

We do not criticise an ox cart or condemn the tallow dip, for the simple reason that they are obsolete. During the reconstruction period through which our country is now passing, if the public does not criticise any public utility or other form of service, it is because there seems

to be but little hope for improvement.

The intricate mechanism of telephone service is, under the most favorable conditions, subject to criticism, for the reason that it is by far the most intimate of all personal services.

The accomplishment of the telephone in the past fixed the quality of service demanded today; a still greater accomplishment in quality and scope of service will set new standards for the future.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES

One Policy

One System

Universal Service

200 Acres, \$3,500 10 Cows, Farm Tools

\$1,000 cash gives possession; all ready for business; near big RR town, famous military college, cash markets; machine-worked fields, brook-watered pasture, large quantity wood and timber; variety fruit, 500 sugar maples; 10-room house, 100-ft. barn, silo, beautiful shade; owner retiring includes everything at \$3,500, only \$1,000 cash, balance easy terms. Details page 13 Strout's Spring Catalog Bargains 33 States, copy free. STROUT FARM AGENCY, 150 D P, Nassau Street, New York.



Big Band Catalog sent free

Whatever you need—from a drumstick to the highest price cornets in the world. Used by the Army and Navy. Send for big catalog; liberally illustrated, fully descriptive. Mention what instrument interests you. Free trial. Easy payments. Sold by leading music stores everywhere.

LYON & HEALY

59-93 Jackson Boulevard, Chicago



15
Colors

10c
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Dealers

Use Aladdin Dye Soap to dye your blouses, dresses, veils, gloves, stockings, underwear, corsets, etc., the newest and most fashionable colors.

WRITE FOR BEAUTIFUL BOOKLET

Channell Chemical Company, Distributors, Chicago
Toronto • London • Paris

Dental Science

Has Now Found a Film Combatant

All Statements Approved by High Dental Authorities



A New Way to Save Teeth

Millions of teeth are being cleaned in a new way. Able authorities have tested and approved it. And leading dentists all over America are now urging its adoption.

The great tooth wrecker is a slimy film. It causes most tooth troubles. It clings to teeth, enters crevices and stays. Ordinary brushing methods do not end it. So that film, despite your brushing, may do a ceaseless damage.

That film is what discolors—not the teeth. It is the basis of tartar. It holds food substance which ferments and forms acid. It holds the acid in contact with the teeth to cause decay.

Millions of germs breed in it. They, with tartar, are the chief cause of pyorrhea—now a common trouble.

Active Pepsin Now Applied

Dental science, after years of searching, has found a way to combat that film. Its efficiency has been proved beyond all question. Now the method is embodied in a dentifrice called Pepsodent, and at least a million people have adopted it already.

Pepsodent is based on pepsin, the digestant of albumin. The film is albuminous matter. The object of Pepsodent is to dissolve it, then to day by day combat it.

Pepsin long seemed impossible. It must be activated, and the usual agent is an acid harmful to the teeth. But science has discovered a harmless activating method, and thus opened a new dental era.

The Results Are Apparent

The results are quick and apparent. They can be seen and felt. A test is a revelation. So we send a 10-Day Tube to those who ask and let results convince them.

Make this test and you will know what clean teeth mean. There are few things more important.

Pepsodent
PAT. OFF.
REG. U.S.

The New-Day Dentifrice

A pepsin tooth paste which conforms in every way with modern dental requirements. Druggists everywhere are supplied with large tubes.

Ten-Day Tube Free

THE PEPSODENT COMPANY,
Dept. 492, 1104 S. Wabash Ave., Chicago, Ill.

Mail 10-Day Tube of Pepsodent to

Name.....

Address.....

ONLY ONE TUBE TO A FAMILY

Accept This Ten-Day Test

Send the coupon for a 10-Day Tube. Then note how clean the teeth feel after using. Mark the absence of the slimy film. See how teeth whiten as the fixed film disappears. This simple test will tell you what is best for you and yours.

A Southern Vegetable Worthy of Your Notice

By Dorothy Giles of New York

SOUTH of the Mason and Dixon line they call it "gumbo," and the tall, hollyhock-like plants are a feature of every kitchen garden, while not a family recipe book but holds the secret of more than one toothsome dish in which it plays a part. But farther north the okra is comparatively little known, and but few housewives can testify to its merits.

I have grown okra for many seasons—fifteen, to be exact. I have tried the different varieties offered in the seedsman's lists, and experimented with soils and exposures. And after this experience I feel qualified to speak of the okra in terms of intimacy.

For those who do not know it, I may say that it belongs to the mallow family, and sends up a straight woody stalk from which spring large rounded leaves. The flower is yellow, very like a hollyhock bloom, leaving as it withers a tapering green pod, which should be picked within a few days of its appearing, as it very soon grows fibrous and tough.

The pods may be used in soup, to which they give a delicious flavor, as well as a thick consistency, or boiled whole, and eaten as a vegetable like peas or lima beans. One of the famous Creole dishes is a thick vegetable stew made of okra, green pepper, tomatoes, and onion; and, served with boiled rice, I know of nothing better or more filling. It is a recipe well worth knowing in these days of the high cost of living.

Okra cans, in the cold pack method, remarkably well. Next to the tomatoes I find it my most satisfactory winter vege-

table, as it may be utilized in so many different ways, while the water, which in the sterilizing has become almost a jelly, is a welcome addition to the soup pot.

After trying many varieties, I have settled upon two which are best suited to my garden: Long Green, which is all that its name implies, and grows five to six feet in height; and Dwarf Prolific, a much stockier plant, with short, thick pods. They do well in a light, rich soil, not too sunny, and will withstand drought and continued hot weather as almost no other garden vegetable that I know. Sown in the late spring, and thinned out 10 inches apart, they should begin to bear soon after the fifteenth of July, and if the pods are kept picked off they will continue until the first cold nights in September.

Okra brings a steady market price which well repays its culture. Last season I planted two 25-foot rows, one of each of the varieties I have named, one packet of seed to a row. From these I gathered enough to supply a household of four—all of them fond of the vegetable—to can two dozen pint jars, and by selling to the neighbors I realized a profit of five thrift stamps on my investment, which, if not high finance, was at least the hallmark of my success.

In the number of newspaper and periodicals, the United States leads all other countries, with England second. In periodicals and printed matter on agriculture, the pre-eminence of this country is especially marked.

The Much Misunderstood Mule



Someone has called the mule the "farmyard philosopher." That he has brains all who have worked with him know. These are on the farm of J. W. Van Natta, Battle Ground, Indiana

OUR sympathy goes out to the mule. Nobody ever takes his part. He is unwept, unhonored, and unsung. He rises before dawn and works far into the night, and all the while he is cheery, hopeful, and uncomplaining, yet his name never appears in print, save in the market quotations. Why is it that all the choice bits of literature are of faithful dogs and prancing steeds? Who is responsible for this barnyard social status? We ask why it is that his voice is heard with a blush and his name is never pronounced in polite society?

We know him intimately. He is a hater of sham and hypocrisy. Possessed of a wonderful executive ability, he forms decisions instantly, and executes the corresponding action with speed of thought. He is just, for he treats friend and foe alike. What an admirable control of temper! What a delicate sense of humor! When some thoughtless hybrid companion playfully tosses him a trip-hammer kick in the ribs, he bears no malice to the one who has wronged him, but immediately, without changing a placid, almost smiling countenance, he passes it to a neighbor who has become absent-minded in the business of eating.

Yet the artists have passed him by, Bonheur has not put him on a single canvas, and of him the poets have hardly written a word. Here is Kipling's gross contribution:

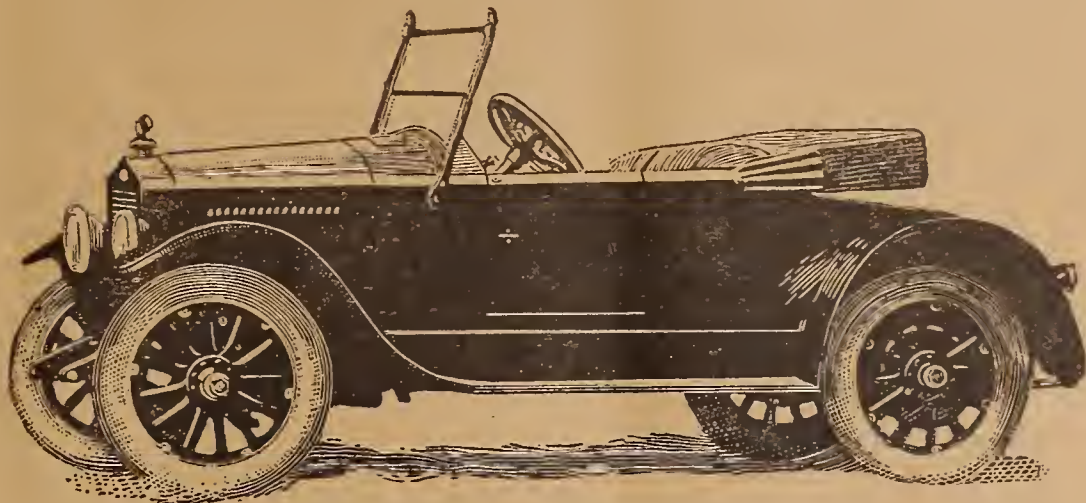
The 'orse 'e knows about a bit;
The bullock's but a fool;

The elephant's a gentleman:
The baggage mule's a mule.

Isn't that typically unfair? Of all the good things that he might have said to simply say, "A mule's a mule"! He even puts the big, lubberly elephant, who can only earn a living by traveling with questionable circuses and being exhibited as a freak of nature, ahead of the utilitarian subject of this sketch. We have thought at times, and now we might as well express it, that the reason Kipling didn't say any more about the mule was because he was afraid to investigate.

Some day a great writer will rise from the common people. His youth will have been spent behind the plow. His broad vision will melt petty prejudice into nothingness. With a pen of fire will he delineate our favorite's greatness. And then shall the "Pride of Missouri" come into his own, and Senator Vest's "Eulogy to a Dog" will be as prosaic as a railway time-table compared to the great masterpiece that is yet to be written—about a mule.

ANONYMOUS.



The Roadster, Too, Has All the Noted Essex Qualities

Speed—Power—Endurance—Economy—Utility
It is an Ideal Car for Business as Well as Pleasure

A glance at the illustrations will show the wide business uses for which the Essex Roadster is adapted.

Its utilities are many. But note no evidence of them is revealed when the Roadster is used as a pleasure car. Every line is smart, trim and graceful. It takes but a moment to make the change.

A World Endurance Record Proves Essex Dependability

A large class of its buyers are business men. They choose it for utility and dependable transportation. It becomes, in fact, a part of their business system. It must be on the job, keep all engagements on time, and be as responsible as an engineer's watch.

These same qualities, with its rare good looks, make the Roadster unsurpassed as a smart car for pleasure.

Economy, durability, and trainlike regularity are the standards set by Essex. These things have been shown in the hands of more than 25,000 owners, many of whom have driven their cars from 18,000 to 20,000 miles without a stroke of repairs.

It was more dramatically proved on the Cincinnati speedway, when an Essex stock chassis set the world's long distance endurance record of 3,037 miles in 50 hours. The same car, in three separate tests, traveled 5,870 miles at an average speed above a mile a minute. Another stock Essex set the world's 24-hour road mark of 1,061 miles over snow-covered Iowa roads.

It is specially suited for salesmen, inspectors and others who must cover wide territory, quickly and frequently.

Come see the Essex Roadster. Ride in it. Try its paces. Whether you want it for business or pleasure, you will appreciate why Essex in its first year set a new world's sales record.



At Left:
By lifting the small cover in the rear deck, space is given for carrying small articles such as doctor's cases, sample cases, etc.



At Right:
By removing four screws the entire rear deck cover may be removed.

At Right:
This affords ample room for carrying bulky articles such as trunks, crates, etc.



MOLINE

The Universal Tractor

DOES all field work—including cultivating, harvesting and belt work. One man operates both the tractor and the implement. The operator sits in complete safety in the usual place—on the seat of the implement.

The work is always in plain sight—no looking backward. Tractor and implement form one unit—can back and turn short.

These indispensable features are particularly profitable at harvest time, when one man instead of two can cut the ripe grain at the rate of 40 acres in 10 hours.

The necessity for saving time and labor is the greatest consideration before the farmer today.

MOLINE PLOW COMPANY MOLINE, ILLINOIS

Branches at: Atlanta, New Orleans, Dallas, Oklahoma City, St. Louis, Poughkeepsie, N. Y., Baltimore, Los Angeles, Stockton, Cal., Spokane, Portland, Salt Lake City, Denver, Kansas City, Omaha, Minneapolis, Minot, N. D., Sioux Falls, S. D., Des Moines, Bloomington, Ill., Indianapolis, Columbus, Ohio, Jackson, Mich.



Shorten Your Harvest Days.

What 790 Ohio Farmers Found Out

(CONTINUED FROM PAGE 20)

Name of Tractor	Size of Pulley	Speed	Per Cent Using
Heider 12-20.....	14	600	43.7
Heider 8-16.....	12	700	30.2
E. B. 12-20.....	12	708	34.0
Case 10-20.....	16	...	34.4
Case 9-18.....	14½	950	33.3
Whitney 12-25.....	11	800	45.0
Waterloo Boy 12-25	14	750	41.9
Titan 10-20.....	20	500	49.1
Mogul 10-20.....	20	400	47.2
Mogul 8-16.....	20	450	41.6
Moline 9-18.....	8	1200	28.1
Cleveland 10-20.....	8	1200	32.3
Huber 12-25.....	13	900	41.0
LaCrosse 12-24.....	11	750	34.2
Bull 10-20.....	12	750	21.4
Avery 12-25.....	19½	570	50.0
Avery 8-16.....	18	600	31.3
Allwork 12-25.....	12½	800	40.9

The fact that on 24.9 per cent of farms where tractors were bought no horses were replaced seems to indicate that all tractors do not replace horses. The larger the farm and the greater the number of horses, the more likely the chance that some of them will be replaced. The speed of the tractor also has a very direct influence on the replacement of horses, for it was found that tractors rated over three miles per hour replaced 2.28 horses, while those under three miles per hour replaced 1.71 horses. Horses were replaced on 527 farms, while the number of farms where no horses were replaced numbered 175.

IN REPLY to the question whether the tractor reduced the labor of the farm, 609 replied that it did, and 90 that it did not, showing a percentage of 12.8 in favor of the farms where it did not. In several instances farmers stated that their tractors reduced the labor one half, and numerous others said that their labor was not reduced but that they were doing twice as much work. Several stated that the tractor did away with as high as two men.

The tractor evidently rates high in reducing the cost of operating a farm, for on only 17.2 per cent of the farms was the operating cost raised. The table below shows a few statistics concerning this phase of tractor economy:

ALL TRACTORS		
Increased Cost	Decreased Cost	Same Cost
84	457	63

In answer to the question whether the tractor was reliable, 619 replied yes, and 97 no, showing that only 13.7 per cent of the tractors proved unreliable to their owners. In many of these cases the unreliability of the machine was traced to the operator's lack of mechanical knowledge.

The following table shows data discovered relative to the size of farms using two and three bottom outfits:

Acres in Farm	Larger Sizes	Farmers Wanting Smaller Sizes	Same Size
Two-bottom 153.9	136	10	202
Three-bottom 183.4	84	8	125

It appears that many farmers are buying tractors too small for their use, and a great number want more reserve power. Much criticism was directed against the tractor agent for overrating the tractor. Many tractors rated as three-bottom rigs are now pulling two bottoms, and almost without exception the farmer is demanding light weight with the maximum of power.

It was found that the tractor was used on an average 62.4 days per year, and that the repair bill varied from \$7.11 to \$56.50, with an average of \$22.42.

The service given by a tractor company determines greatly the value of the tractor to the farmer. The ease of obtaining spare or repair parts or an efficient service man at quick notice should not be overlooked, and the policy of companies selling tractors and then forgetting the purchaser was severely criticized.

Sheep as Lawn Mowers

"TELL Dad to trade the lawn mower for a sheep, and let the sheep do the work while he sits in the shade this summer," writes a soldier boy from France. "The French people put sheep in little pens on their lawns and in their parks. The pens are on wheels, and as the sheep eat the grass they move along with the pens. They do a good job, and the lawn is made to do its bit by producing wool and mutton. Fine scheme, don't you think?"

The Blue Grass Farm Kennels, of Berry, Ky., offer for sale, Setters and Pointers; Fox and Cat Hounds, Wolf and Deer Hounds, Coon and Opossum Hounds, Varmint and Rabbit Hounds, Bear and Lion Hounds, also Airedale Terriers. All dogs shipped on trial, purchaser alone to judge the quality, satisfaction guaranteed, or money refunded. Sixty-eight page, highly illustrated, instructive, and interesting catalog for ten cents in stamps or coin.

Wool Profits

Don't lose part of your wool money by shearing the old fashioned way. Shear with a machine. The extra wool secured from your sheep soon pays the cost of one. You secure better wool more easily and quickly and benefit your flock. Get a Stewart No. 9 Ball Bearing Shearing Machine. Price \$19.25. Send us \$2—balance on arrival. Write for catalog.

CHICAGO FLEXIBLE SHAFT COMPANY
Dept. B164, 12th St. and Central Ave., Chicago, Ill.

PULL STUMPS FREE!

One Man Alone Handles Biggest Stump! KIRSTIN One Man Stump Puller Weighs less! Costs less! Has greater speed, strength, power. Man alone pulls stubborn stumps! Get Free Book—Special Agent's Proposition. Write!

A. J. KIRSTIN CO.
2110 Lud St., Escanaba, Mich.

AGENTS WE WILL FURNISH YOU THIS NEW AUTO-MOBILE

AND PAY YOU \$100 A WEEK

Introducing a marvelous new Automobile invention. It doubles power, mileage, efficiency and saves 10 times its cost. Sensational sales everywhere. Territory going like wildfire. We furnish our Agents a Ford Car, a \$26.00 Sample Outfit and a Complete Course in Salesmanship. Write quick.

L. L. BALLWEY, Sales Mgr. Dept. 257 Louisville, Ky.

Money-Making Farms 17 STATES. \$10 to \$100 acre. Stock, tools, crops often included to settle quickly. Write for big illustrated catalogue.

E. A. Sireut Farm Agency 2026 D. P. Sun Bldg. New York

SALESMEN WANTED

Lubricating oil, grease, paint, specialties. Whole or part time. Commission basis. Men with car or rig.

RIVERSIDE REFINING COMPANY, CLEVELAND, OHIO

ORNAMENTAL FENCE

6 Cents per Foot and up. Costs less than wood. 40 designs. All steel. For Lawns, Churches and Cemeteries. Write for Free Catalog and Special Prices.

Kokomo Fence Machine Co. 427 North St., Kokomo, Ind.

"The Best Job I Ever Had"

John E. Ridenour, Maryland

For three years he has consistently been one of FARM AND FIRESIDE's most successful country representatives.

That's what John Ridenour thinks of his work for us. Not so long ago he was plugging along in a routine job, just as thousands of others are doing. We showed him how to get ahead. He did the rest. The same opportunity to make big earnings is open to you. If you are interested, clip and mail the coupon to-day.

Farm and Fireside, Springfield, Ohio

Gentlemen: Please send me complete details of your work.

Name..... R. F. D.

Post Office..... State.....

An Old Idea in New Clothes

IN THE shade of the old apple tree,
Where the snow and the rain blow
so free,
It's no place to store
The binder and mower
And implements there that you see;
For the rust and the rot, you'll
agree,
Are worse than hard usage would be,
And the paint that they wore
Is a shade, nothing more—
Just the shade of the old apple tree.

Missouri Farm News

Forage Crops Find a Place on My Farm Because They Pay

(CONTINUED FROM PAGE 17)

loss of dry matter in the silo, and the silage is superior in food value, and more digestible and palatable.

This combination of good silage, good pasture, and forage crops afforded ample opportunity to limit grazing on my pastures, to retain the grasses and clovers of high food value, and furnished a succession of grazing or better and more continuous grazing. I was able to produce milk and mutton more cheaply, and fewer acres of land were required.

I found it possible to grow good corn in rotation with little additional plant food or fertilizer by concentrating the use of reinforced manure on oats stubbles for the clover crop, and by keeping the land sweet through the liberal use of lime prior to planting oats.

The system of producing succulent feeds the year around may be put into practice anywhere in the United States. But a knowledge of the forage crops best adapted to any given locality must be had if good results are to be obtained. The addition of good alfalfa hay enables the feeder to reduce the amount of expensive concentrates necessary to purchase for the feeding of his animals.

The Illinois Experiment Station fed ten cows corn silage and alfalfa hay for six years, and secured an average of 7,469 pounds of milk to the cow. This is from 1,500 to 2,000 pounds more milk than the average production in almost any State. Take New York, for example, as the biggest dairy State in the East. Its average production is barely 5,000 pounds of milk. A method of the Illinois kind is not entirely practicable. It is practicable, however, to utilize a modification of it, such as I put into operation. By it the use of concentrates may be decreased in quantity and cost, because a more dangerous amount of high protein feeds are raised and succulent feeds are obtainable the year around.

I WAS simply amazed recently to see the crops of velvet beans grown by some of the more progressive feeders of the South for forage. In the Southwest, sugar cane, sorghum, and kafir corn grow luxuriously, and are used in a limited manner for this purpose. In the Northern States and places of high elevation the sunflower is coming into its own as a silage crop. It is quite new. Varieties are not yet well defined, but still it is not at all an uncommon crop all along the Canadian border, especially in Montana and the Dakotas.

But the practice of growing supplemental forage crops is not general. It is only just beginning to be a part of the farm business or system. In the Eastern Atlantic States the growing of soy beans, cowpeas, millet and oats, peas and barley, has greatly increased in the past ten years. It would be profitable from the point of view of feeding and pasture improvement to cut an occasional swath of wheat or rye, some alfalfa or clover, or some corn for forage, yet at the present time the very idea would seem like heresy to most farmers. The wheat or rye was planted for grain, the alfalfa for hay, and it succeeded only after many trials and tribulations, and the corn was planted for husking, none was planted for forage. There should be a little more leniency with these crops grown for green manures, such as rye, wheat, vetch, crimson clover, and the like, which are often planted in early spring.

We need good silage, more forage crops, and better pastures to provide "succulent feed" the year around."

Send No Money- Just the Coupon Get a Famous New Butterfly

Save \$2

Coupon Makes the First Payment the Separator Itself Pays the Rest

Here is an opportunity for you to get one of the famous New Butterfly Cream Separators direct from our factory without sending a cent of money in advance. The coupon at the bottom of this advertisement is worth \$2.00 to you. If you send it at once we will accept it the same as cash for full first payment of \$2.00 on any 1920 model New Butterfly Separator. Just fill out the coupon, telling us which size machine you want and we will ship it for you to try 30 days in your own home. Then you can find out for yourself just how much the New Butterfly Cream Separator will save and make for you.

Coupon Makes All of First Payment—Nothing More to Pay for 30 Days

Think of It! You can see for yourself before you pay a cent how easily this labor saving, money making machine will save enough extra cream to meet all the monthly payments before they are due. In this way you won't feel the cost at all. You will have a separator to use on your farm and the money in your pocket.

Pay Only \$3.50 to \$6.40 a Month According to Size Separator You Need

You get the benefit of the great saving in time and work while the separator is paying for itself. After that the profit is all yours and you own one of the best separators made—a steady profit producer the year 'round—a machine guaranteed a lifetime against all defects in material and workmanship and you won't feel the cost at all. By ordering direct from this advertisement you save the expense of a catalog, postage and time, and we give you the benefit of this saving if you send the coupon below. You have the machine to use instead of a catalog to read. You have a chance to compare the New Butterfly with other separators in your neighborhood regardless of price. You have a chance to see how much more cream you would save if you owned a separator. That is why we are offering to send you a machine from our factory to use 30 days.

30 Days' Free Trial Life-Time Guarantee

Against Defects in Material and Workmanship

If at the end of 30 days' trial you are not pleased just send the machine back at our expense and we will pay the freight charges both ways. You don't risk a single penny. If you decide to keep the separator we send you, this coupon counts the same as a \$2 payment. You take that much right off from our factory price on the size you select. For example, if you select a \$44.00 machine you will have only \$42.00 to pay in twelve easy payments of only \$3.50 a month. If you select a \$56.00 machine you will have only \$54.00 to pay in twelve easy payments of only \$4.50 a month and so on. You can pay by the month or you can pay in full at any time and get a discount for cash. The coupon will count as \$2.00 just the same.

NOW This Coupon is Worth \$2 To YOU



If You Keep 1 or 2 Cows

order the New Butterfly Jr. No. 2½—capacity up to 250 lbs. or 116 quarts of milk an hour. Price, \$44.00. Terms, free \$2.00 coupon with order—balance \$3.50 a month for twelve months.

If You Keep 3 or 4 Cows

order the New Butterfly Jr. No. 3½—capacity up to 400 pounds or 190 quarts of milk an hour. Price, \$56.00. Terms, free \$2.00 coupon with order—balance \$4.50 a month for twelve months.



If You Keep 5 or 6 Cows

order the New Butterfly—size No. 4½ (shown below)—capacity up to 500 lbs. or 250 quarts of milk an hour. Price, \$65.00. Terms, free \$2.00 coupon with order—balance \$5.25 a month for twelve months.

This Cut Shows Style of No. 4½, No. 5½ and No. 8



If You Keep 7 to 10 Cows

order the New Butterfly—size No. 5½—capacity up to 600 pounds or 300 quarts of milk an hour. Price, \$74.00. Terms, free \$2.00 coupon with order—balance \$6.00 a month for twelve months.

If You Keep More than 10 Cows

order New Butterfly big dairy size No. 8—capacity up to 850 pounds or 425 quarts of milk an hour. Price, \$78.80. Terms, free \$2.00 coupon with order—balance \$6.40 a month for twelve months.

It Is Always Best

to select a larger machine than you need. Later on you may want to keep more cows. Another thing—remember the larger the capacity of your separator the faster it will skim and the less time it will take to do the work.

ALBAUGH-DOVER CO. Manufacturers

2333 Marshall Blvd., Chicago, Ill.

AGENTS: \$54 a Week

Taking Orders for New Coal-Oil Burner



Most perfect burner ever invented. Can't clog up. Burns just like gas. By regulating valve you get as little heat as you want, or you can heat oven to baking point in ten minutes.

BIG SUMMER SELLER
Burns coal-oil. One hour for two cents. Low-priced. Nothing else like it. Not sold in stores. Write quick for agency and sample. No experience or capital needed. You take the orders. We ship by parcel post and do all collecting. Commission paid same day you take orders.
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More Than 175,000 Now in Use

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No Discs to Clean

The New Butterfly is the easiest to clean of all cream separators. It has no discs—there are only three parts inside the bowl—all easy to wash. It is also very light running with bearings constantly bathed in oil. Free circular tells about these and many other improved features.

SEND THE COUPON NOW

whether you want to buy for cash or on the easy payment plan. We have shipped thousands of New Butterfly Cream Separators direct from our factory to other farmers in your State on this liberal plan. More than 175,000 of these machines are now in use. You take no risk whatever. You have 30 days in which to try the New Butterfly we send you before you decide to keep it. This is an opportunity you can't afford to pass by. Get your cream separator now. Start it making money for you. Send the coupon today. It is worth \$2.00 to you.

ALBAUGH-DOVER CO., 2333 Marshall Blvd., Chicago

Please ship me on 30 days' free trial one New Butterfly Cream Separator, size..... If I find the machine satisfactory and as represented by you, I will keep it and you are to accept this coupon as \$2.00 first cash payment for same. If I am not pleased you agree to accept the return of the machine without any expense to me and I will be under no obligation to you. I keep..... cows. I wish to pay on..... terms. (Cash or payment)

Name.....

Shipping point.....

State.....

Postoffice.....

Name of your bank.....

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The
National Cement



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Be like James Richards, of Missouri. A few months ago he was very dissatisfied with his earnings and saw the need for making his spare hours produce for him. To-day his salary, plus his spare-time earnings, amounts to quite a bit and he feels very well satisfied. There are many who would like to make their spare hours earn money, but they don't know exactly how to go about it. Suppose you tell us how much spare time you have and let us show you how to make it pay you in cash—just like Richards. Write C. M. MITCHELL, Farm and Fireside, Springfield, Ohio

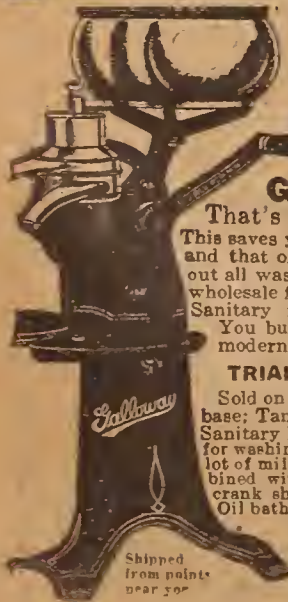
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The sure-enough, old-fashioned, nature-flavored Kentucky homespun smoking tobacco, that's all. No dope, no doctoring, just as I select, air-cure and age it in the good old fashioned honest Kentucky way, ready for you to stuff right into your pipe for the smoothest and most satisfactory smoke you ever had or money back. Big pound can only \$1 postpaid. Blend to suit every taste. Order today, stating choice of heavy, medium or mild blend. Remember, it's satisfaction or your money back. That's me.

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Big demand. Easily prepared. Always fresh. Absolutely pure. Guaranteed under U.S. pure food laws. Must satisfy customer or money back. Carry quantity right with you. Write today for territory and sample outfit. Get a big line of customers and get repeat orders every month and have a steady income. Don't put this off. Write quick.

AMERICAN PRODUCTS CO., 2095 American Bldg., Cincinnati, Ohio

A Big Milk Record Doesn't Always Mean a Profitable Dairy Cow

[CONTINUED FROM PAGE 11]

buy at the time of the sale. That was one time we gambled and won. We expect great things from Sir Kerndyke.

And right here I would like to emphasize the importance of securing the best veterinary assistance whenever in any trouble with your cattle or other livestock. Without it our best herd bull would have been lost, and our herd would have been ruined by a serious trouble. I will tell more of that later on. We have always found our experiment station men willing to co-operate with us, and to help us out of any difficulty. Any farmer who takes the trouble to ask for it can have this expert assistance. If your case is really an important one, your agricultural college or experiment station men will be only too glad to assist you without cost or at a very nominal cost.

SOME of the best cows we have ever owned have been grades. Birdie is a grade cow that has not only been a great producer herself but has also shown her ability to transmit these qualities to her offspring. From March 1, 1913, until February 28, 1918, Birdie produced 67,498 pounds of milk and 2,697 pounds of butterfat. The feed cost was \$345.60, and the butterfat sold for \$729.48. Her skim milk and calves would make a great deal more. We keep an exact account of every cow, and know just what she is doing. There are good cows among grades—if you hunt them out.

Birdie's calves have all been remarkable producers. Anne, the oldest calf, as a two- and three-year-old, produced from March 1, 1916, to February 28, 1918, 24,956 pounds of milk and 955 pounds of butterfat. The feed cost \$153.03, leaving a net profit of \$309.65 for the two years.

Another daughter of old Birdie has earned two certificates of merit, and set a record as a two-year-old with 11,497 pounds of milk and 480.2 pounds of butterfat. Her feed cost was \$84.05, leaving a net profit for the year of \$169.23.

Our cows are bred for economy of production, as I said. A big milker may be a robber just as much as a poor milker. Big producers cost a lot to feed. To have big production it is necessary to have size. Dr. Leonard of the Department of Agriculture remarked that our yearlings are as big as most two-year-olds.

Of course, we feed well. That counts a lot, but mostly it is breeding. Our foundation cow, Lady Netherlands De Oakhurst, has a record of 18,539 pounds of milk and 658.8 pounds of butterfat. Our young sire, Sir Kerndyke Ormsley Pieve Mercedes, who had such a narrow escape from pneumonia, descends from high-producing strains on both sides of the family. His sire's dam, Queen Pieve Mercedes, still holds the four-year record with 30,230.20 pounds of milk and 1,389.45 pounds of butterfat. Our old sire is a full brother of that grand cow Tillie Alcartra.

Where many breeders fail is in changing blood lines too often and too suddenly. Top crosses of blood lines do not work. Outcrossing results, and the work goes backward instead of progressing. Blood lines should be changed very gradually.

WE BELIEVE the future of the Holstein breed lies in the Mercedes family. So we line-breed by selecting sires that carry Nederland and De Kol blood. With our herd we need at least 50 per cent De Kol blood and 50 per cent Ormsley. If you must outcross, keep at least 50 per cent of the same family; otherwise it will tear your herd to pieces faster than you can build it up.

You are skating on thin ice when you inbreed, and it must be done very cautiously. Outcrossing of constitutional weaknesses is liable to result if carried too far. Inbreeding is very effective, however, if not overdone.

We like cows that weigh 1,300 pounds or over. But, above all, it is economy of production that counts. Pedigrees are worth nothing unless the animal is an efficient milk-making machine. Our grade cows out of old Birdie have sold higher than the average purebred in this county, simply because they are big producers and easy keepers.

Our crop rotation on this 205-acre farm consists of corn, barley, ensilage, and clover and alfalfa hay. We supplement

[CONTINUED ON PAGE 47]

Net Profit \$57,904.61

THERE are 2,889 enthusiastic boys and girls in Idaho ready to testify to the profitableness of club work. Reports for 1919 show that the clubs' production amounted to \$95,992.31. The cost involved was \$38,087.70. The net profit was \$57,904.61. The largest project was canning. A total of 111 clubs with 934 members canned fruit, vegetables, and meat worth \$34,909, at a cost of \$17,181.

A Big Milk Record

[CONTINUED FROM PAGE 46]

this with plenty of good blue grass in summer, and a spring-fed brook runs right through the pasture land.

An improved strain of Reed's Yellow Dent makes the best ensilage corn we have found, and we use Silver King for cribbing. We have tried several strains of selected oats from the Iowa Experiment Station, and have found them much superior in yield and stiffness of straw to the ordinary varieties grown around here. That's where quality crops prove their worth just as quality stock does in increased returns. We keep in close touch with the folks down at Ames, and find that pays too; also with our good county agent, A. A. Berger.

There are a lot of things that go to make up success in life, but we believe the most important is finding the kind of work you like best, and sticking to it. We have found it in our Holstein breeding. It is genuine pleasure to us, and profitable.

My Boyhood on a Middle-West Farm in the Days of Long Ago

[CONTINUED FROM PAGE 16]

sod, dropping the corn in the cleft, and with another stroke of the ax pressing the sod closely against the corn. The farmer didn't expect much of a crop on freshly turned sod, for it could not be cultivated to advantage, but he did expect to get some fodder.

Prairie sod was usually turned in the summer or fall, and by the freezing and thawing of winter was in a condition to allow of some cultivation the following year.

As a boy I was fond of reading. Father always took the county paper and any others that he could afford. Besides, he had some books. So we had something to read of evenings. I remember when he brought home a two-volume edition of the works of Thomas Dick, the great Scottish philosopher and astronomer, with what breathless attention we listened to his reading from these books for many evenings afterward.

This farmer for whom I drove the plow team lived too far away for me to go home of nights, so I had to lodge with him. All the reading I could find at his house were a few back numbers of a farm paper—"The Missouri Valley Farmer" or some other "Farmer." I got along all right through the days, but when the nights came I was desperately lonely for something to read. I must have read those old papers over several times, advertisements and all.

I remained there about four weeks, going home at the end of each week for a change of clothing. Usually I would cut out straight for home across the prairie without paying much attention to roads. On one of my trips I ran on to a big bull snake lying in the grass. His body was as big as my wrist. I heard a hiss like an old gander's, and I made a record leap backward. But there was no gander there; instead, this big snake.

The bull snake is much like a rattler in shape and appearance, but has no rattler, and is not poisonous. He warns you by a hiss, which sounds very much like that of a goose.

There were many rattlesnakes on the Iowa prairies then. They were darker than any other variety, and were sometimes called the prairie or black rattlesnake. When going across the prairies on foot it was a precaution to carry a good stick, for you might run on a snake and not find something handy to kill him with.

Nobody likes a snake. They always look snaky. You never feel safe looking at one, particularly a poisonous kind, and you always look around for a club. Even when looking at one in a glass cage I am somewhat apt to feel the glass isn't thick enough. [TO BE CONTINUED]

Fairbanks-Morse "Z" Farm Engines

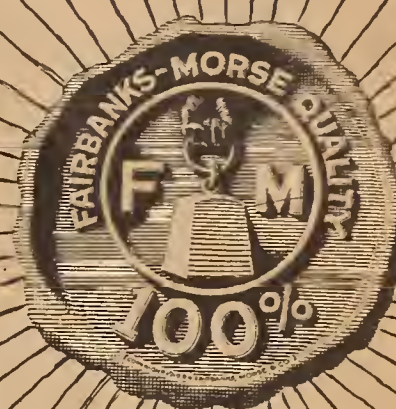
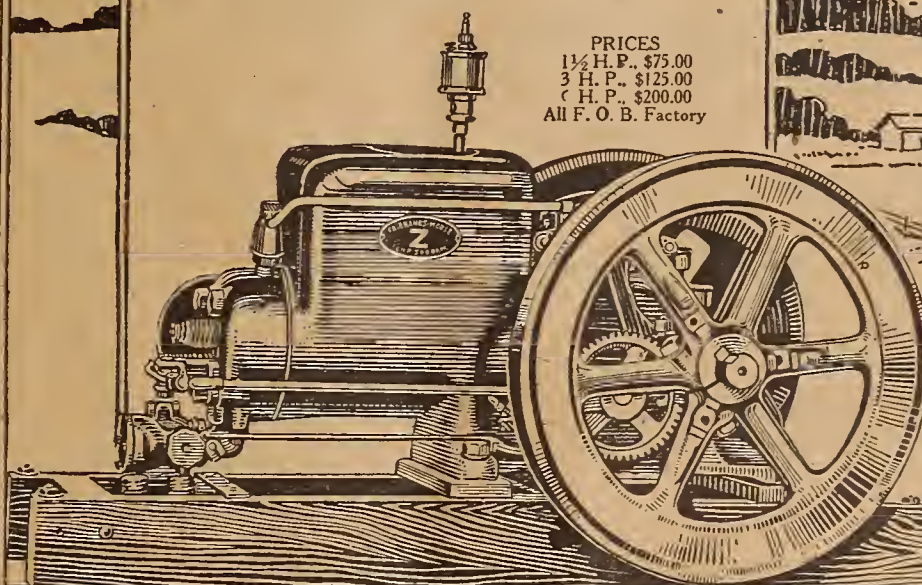
THE supremacy of the Fairbanks-Morse "Z" Farm Engine was predestined. It had to be. For not another engine offered so much in workmanship—in factory-created quality—and in farm-tested performance.

Over a quarter-million shrewd judges of engine values made this engine famous over-night! They found in the "Z" that dependability that they had hoped for since the day of the first farm engine. They justified the faith of the men who made this engine by endorsing their product to the extent of buying over fifteen million dollars worth from "Z" Engine dealers.

In the "Z" they bought dependable power—more than enough for every farm need for which the type you choose is adapted—dependable workmanship which has made the utmost of high grade materials—a correct design—aided by 200 Bosch Magneto Service Stations—all unified by the efficient service rendered by thousands of "Z" Engine dealers.

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This sturdy, handsome ARMY WORK SHOE is built so solid full of wear and so chock-full of comfort that we are willing to send it to you ON APPROVAL all charges prepaid. Just state your size—that's all. You will be delighted with their splendid, soft, selected leather uppers. Their double thick soles of Genuine Indestructo Oak Leather often wear one year before tapping. Customers are writing us daily: "They are the easiest and longest wearing shoes I ever had."

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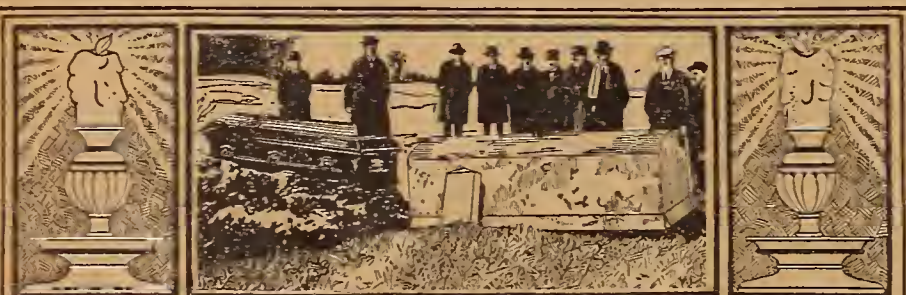
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It does the work!



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The Clark Grave Vault

Peace of mind to the living comes from the knowledge that their beloved dead will be perfectly protected for all time.

No ordinary vault will long keep out the moisture or standing water that every grave contains. The Clark Grave Vault alone has a permanently water-tight construction. Its "bell" shape keeps the interior always dry. The air within holds water out even when completely immersed and under tons of hydraulic pressure during manufacturing tests.

Every part of the Clark Grave Vault is made of electrically welded Keystone copper-bearing steel and guaranteed for fifty years. Thousands of disinterments prove its principle and manufacturing absolutely successful.

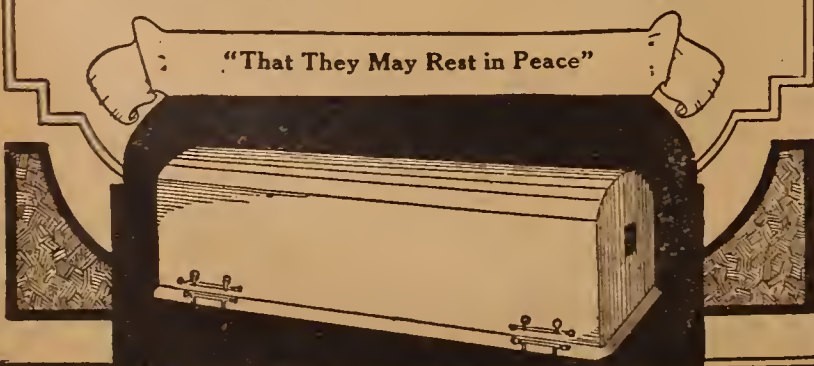
Conscientious undertakers recommend Clark Grave Vaults because they are backed by 20 years of satisfaction-giving. Positive proof in booklet mailed on request. Address Dept. B22.

The Clark Grave Vault Co.

Town and Starling Sts.

Columbus, Ohio

"That They May Rest in Peace"



Factory is Taking Farm Labor

[CONTINUED FROM PAGE 15]

now coming to this country will not even enable the industries to replace the foreign-born workmen who have left America since the armistice, and those who are preparing to throw up their jobs to go back to their home lands. The immigration authorities estimate that 1,125,000 will leave this country when passport conditions permit. More than 200,000 already have left. And all this country can count upon receiving for 1920, according to the estimate of immigration officials, is 300,000, which is one third the normal rate of immigration. It is worthy of note, also, that the large majority of the immigrants who now are coming here are women and children who have journeyed across the seas to join husbands and fathers already here, and returning reservists.

Certain medium-priced staples are disappearing from the market because the people who help make as well as consume the cheaper goods are not here, and because the manufacturer finds that with the price he is paying for labor it would pay him better to transfer production to the luxuries, which afford a better and a quicker turnover.

WHEN Herbert Hoover wanted to get cheap shoes for the American Relief Administration for the children of Europe, he found that the shoes that he was looking for—good shoes and moderate-priced shoes—were not to be had. He was told that the manufacturers had stopped making them because there was no demand for them. Mr. Hoover said that he had to have them, and because it was Hoover they opened the factories and manufactured the shoes, and Mr. Hoover delivered to the children of Europe the kind of shoes that persons in this country have been looking for in vain.

Would those shoes have disappeared from the market if immigration during the war had continued at the normal rate? Four million immigrants, wearing two pairs of shoes a year each, would mean 8,000,000 pairs of shoes added to whatever other demand there was. It is hardly likely that manufacturers would ignore a market consuming 8,000,000 pairs of the cheaper grade shoes.

This question of immigration is definitely linked up with the problem that faces the farmer. If immigrant labor is scarce, then the cost of agricultural implements is bound to be increased to the farmer, for immigrants are an important factor in the primary grades of work in the factories where those implements are made.

If immigrant labor is scarce in the cities and wages necessarily high, the farmer is bound to lose his farm help, and the seasonal and migratory labor, composed to a large extent of Finns, Italians, Poles, Portuguese, Syrians, Belgians, and Bohemians, will be non-existent.

AFEW months ago some of our uninformed public men thought that the departure from this country of a large number of our foreign-born residents would be a good thing. It was thought that it would be necessary to make room for our returning soldiers. Then came the alleged revolutionary attacks on our form of government. The cry was raised against the foreign-born because a few of their number were found to have participated in ultra-radical activities. But it has been ascertained that a very small number of our foreign-born population are ultra-radical. Less than one per cent of the foreign language newspapers, for instance, has had a tendency toward communism, and less than five per cent has been socialistic.

To-day, as a result of the departure in large numbers of immigrants since the armistice, we in the manufacturing world find ourselves in a situation which looks as though we were to lose our coal miners. Who will do the work these men leave?

When the normal movement of new labor from Europe to America has been restored,

and when the vacancies caused by immigrants leaving the country have been filled, the industries will not have to draw upon the farms for man power. When this normal movement has been established, wages will be more nearly on an equitable basis. Competition for jobs will be restored, and the situation in the industries will right itself; but until then the demand for men in the primary grades of work will continue.

Organized labor does not care to see any change in the situation, preferring to shut off immigration entirely. It would like to see as large a departure of foreign-born workers as possible, too. As one labor paper frankly states it: "More emigrants going abroad; more strikes at home." It means higher wages all around, including higher wages on the farm. Such an attitude, however, completely overlooks the fundamental dependence of the nation, and of labor itself, on adequate production.

What is the farmer's attitude on immigration going to be? In the past you may have been inclined to think it was of little direct concern to you, except, of course, the concern that America be safeguarded against an importation of dangerous ultra-radicalism. The immigrant is not going into farm work to any great extent, says the farmer; he is going into industry. But by going into industry he leaves the farmhands to the farm.

It is significant that most of the immigrants who come to this country were farmers in their home lands. Whose fault is it that they are not going into agricultural work? Are their farming methods so totally different from our own that they cannot be adjusted to our way of doing things? Can't they learn the uses of machinery and the care of it? They seem to learn readily enough in industry, for thousands have developed from unskilled to semi-skilled and skilled workmen.

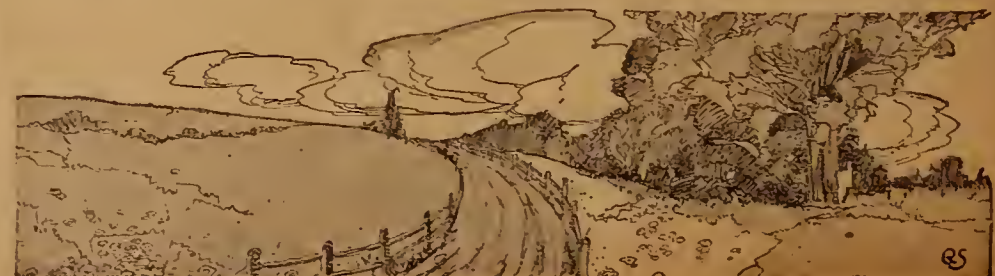
TO MY mind, this country has to give greater consideration to the subject of immigration than ever before. We need to exercise care in selecting our immigrants. We want only the best that Europe can offer—those who can be most easily assimilated, and who can contribute to the upbuilding of American citizenship—and we want only as many immigrants as we need—not a deluge of immigrants.

There should be some survey of both our industrial needs and the needs in the undeveloped sections of the country, where there are great stretches of land requiring cultivation. A study should be made to determine how immigration can help in the fuller development of our agriculture.

We should have means for receiving, distributing, and assimilating the immigrants who come here—means for winning him to America and American citizenship by representing to his mind the better conditions of life, and by understanding him and helping him, and by accepting the cultural contributions of older civilizations than ours, for the development of a bigger and nobler America.

Such an immigration policy is being advocated by an organization formed recently by a large number of industrial establishments and leading men from among the races in America. That organization is known as The Inter-Racial Council, of 120 Broadway, New York City, which has established contact with nearly five hundred large industries and with thirty-two racial groups, and which is working out a program of Americanism throughout the country. The Council is inserting advertisements in the foreign-language papers on economic and national subjects, which are for the purpose of counteracting the Bolshevik propaganda.

The idea that Americans in agricultural pursuits are interested in immigration only indirectly does not hold any longer, for what concerns industry concerns agriculture. Agriculture cannot view with detachment and indifference the problems of the industry.





This picture, which was taken during the New Jersey State short course for boys' and girls' club prize winners, shows several of the winning calves with their proud owners. Club work is playing an important part in developing the livestock breeders of the future.

What Time of Year Will Your Cattle Bring the Best Price?

[CONTINUED FROM PAGE 9]

the present condition of the cattle market with that of a year ago. If you remember, feeders were having a hard time getting a dime for good fat yearlings, and it didn't pay to feed them much corn. No matter how well finished they were, the sale was hard and forced.

Now good yearlings are being snapped up at top prices, and prime heavy cattle sell readily at a premium. The men who are making the medium stuff are complaining because of low prices.

You and I are sometimes swayed by someone else's judgment, when we should do our own thinking. And in most cases of this kind we would have been better off if we had done as we figured best. This I find is true in the cattle market. The man who stands still while the others run, usually comes out on top. By this I mean that the man who decides to feed out his cattle, when the rest are turning them off a short feed, will find it profitable, because when he has his stuff ready for market the supply of long-fed stuff will be scarce.

To that end, feeders who stick in the business year after year, even though they may have to take the short end in some seasons, always quit with a good margin, and this is not written in red ink.

Ben Myers of Dexter, Iowa, who has been feeding cattle for close on forty-five years, recently told me that he lost money sometimes—as high as \$2,000 in a season—but on balancing his books for the whole forty-five years he had enough to buy him two good-sized farms in Iowa which are worth about \$400 an acre.

I HAVE found that many men quit feeding when they lose on a bunch of cattle, and start again when prices are high. Usually they get hurt again, for, as Pete Wagner said recently in FARM AND FIRE-SIDE, the time to feed is when the other fellow is selling.

The cattle-feeding business has its ups and downs like any other business, but it is a profitable business if handled right.

In buying feeding cattle, I have observed that the prices are low in November and December, and begin to go up right after the holidays, reaching the high point in the spring, when farmers are anxious to fill their pastures for the summer. Then, as demand ceases, and the supply of thin cattle comes on from the range country, prices start to drop until they reach the low point at the end of the year.

I spoke about the poultry demand in the

early winter, and lasting clear over the first month of the new year. Let us take a look and see what other factors affect the trade for the remainder of the year.

On the farm the feeder is not usually familiar with the seasonal demands for food which are prevalent in the city. These we are apt to forget about, but by comparing what I found, with the trend of the market, I find they have some effect. On the farm there is plenty of all kinds of food, and no attention is paid to how the city consumer eats.

ALONG toward Easter, in the spring of the year, eggs get a big play. The Southern egg season opens early, and these eggs are put on the market. Practically the entire crop is sold, because the Southern egg is a bit watery and does not store very well. Naturally, with a good supply, they are rather cheap.

Then Lent comes, with its numerous fast days, and the consequent eating of large quantities of fish, eggs, and dairy products. Beef suffers from this demand, but mutton is helped, because people eat a lot of it at this time. The supply of cattle at this season is comparatively small, so this keeps the price up.

In the summer months people resort to vegetables and dairy products to no small extent. The fall and snow bring on rabbit-hunting. It does not appear that rabbits hurt meat consumption, but did you ever take into consideration the number of rabbits eaten every year? The city markets sell an enormous number of rabbits, and one cannot pass by any shop that he does not see a barrel of rabbits in front. These sell at 25 to 50 cents, and find good demand. Many people prefer rabbit to chicken, and when a rabbit weighing three to four pounds can be had for 25 cents it is easy to see whether beef or rabbit will be eaten, with everyone trying to cut the cost of living.

These are observations I have made in the nine years I have spent around the Chicago market. If I have not given you what you want to know here, write me your questions, care of FARM AND FIRE-SIDE, 381 Fourth Avenue, New York City, and your letter will be forwarded to me here at Chicago for a reply.

NOTE: This is the first of a series of articles by Mr. Delohery in which he will discuss market averages, and what they show about when to sell cattle, hogs, and sheep to best advantage.—EDITOR.

That's the Idea!

FRANCE is making every effort to increase her agricultural production. Co-operative associations are to be formed for threshing, dairy-farming, and grape-pressing. Drainage and soil-improvement works are also to be taken in hand. The greatest possible use is to be made of electricity. Farmers have been circularized, and asked to join associations for these purposes. It is hoped in this way partially to make up for the labor shortage, and to put agriculture on a higher footing.

Good Breeding Counts

W. G. POTTER of Provo, South Dakota, received \$52.25 more for steers from a purebred bull than for steers from a scrub bull in the Omaha market. He shipped five steers from common grade cows of equal merit. The two steers sired by a scrub bull brought \$95.55 each, while the three steers from a purebred bull brought \$147.80 each. The steers received practically the same care. Fewer and better cattle are often more profitable than a large number of scrub animals.

DE LAVAL

THE EVERLASTING CREAM SEPARATOR

There are thousands of voluntary letters in the De Laval Company's files, similar to this letter from Mr. Watkinson, of Iowa, bearing out the statements made in connection with the long service of De Laval Cream Separators.

In fact, by averaging up the years of use, it has been found that the average life of a De Laval is more than 15 years; and that during that time they have required little attention or repairs, and have produced the highest possible quantity and quality of cream with the least time and effort.

That is why there are more De Laval in use than all other makes combined. Sooner or later you will buy a De Laval.

"My De Laval Separator has been in use about seventeen years and is doing just as good work today as when I bought it. I think it is good for ten years longer. With butter-fat at present prices no one can afford to use a cheap machine. "When looking around to see what kind of a separator to buy I found that all the creameries in our vicinity were using the De Laval. The thought struck me, what is good enough for the creameryman is good enough for me, and my experience proves I made no mistake."
Ed. Watkinson.



The nearest De Laval agent will be glad to demonstrate a De Laval. If you do not know his name, write to nearest De Laval office.

The De Laval Separator Co.

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50,000 Branches and Local Agencies
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Here is another fellow fussin' around his gas buggy with a lot of new spark plugs, new coils, new this and new t'other — when a couple of dollars worth of Effecto Auto Finishes would make it contented for life! Isn't it so?

Haven't you at times done a lot of unnecessary fooling around your car? And at other times didn't the old boat seem to show signs of new life after you had washed her all up?

Effecto
AUTO
FINISHES

And here's a real thrill, for a few dollars: a few hours interesting work and a coat or two of Effecto Auto Enamel applied to your car will give you much the same sensation as driving a brand new car out of the sales room!

Here's what Charles V. Bradford, dealer in fine leather goods, of Niagara Falls, Ont., says about Effecto: "I refinished my car with your Effecto some three years ago, and it left me (when I sold it last spring) in first class shape. I cannot speak too highly of it."

Note that Mr. Bradford says the finish was in "first class shape" when he sold the car. Over two years of service is what Effecto gave him, and it was still in good condition!

Effecto Auto Enamel goes on with a brush,

quickly, easily and without trouble. It is easy-working, self-leveling and quick-drying because it is the genuine, original auto enamel which will last longer than the finish on most new cars — not a paint, wax or polish.

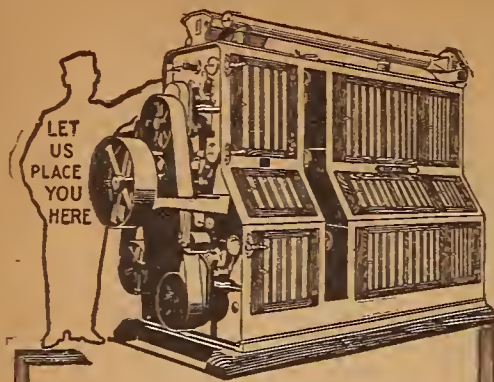
Made in nine snappy colors: Black, Blue, Green, Red, Brown, Yellow, Gray, Cream and White; also clear Finishing varnish and Top & Seat Dressing, which renews and waterproofs fabric or imitation leather tops of all kinds, as well as upholstery.

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Grind your home-grown wheat, supply your community with flour and feed. You save the freight on the wheat going out, and the flour and feed coming in.

Besides earning the regular milling profits you get the extra profit of making "A BETTER BARREL OF FLOUR CHEAPER" on the famous "MIDGET MARVEL." The new process, self-contained, one-man, roller flour mill that is revolutionizing the milling industry. It requires less than half the power and labor of the usual roller mill and makes a creamy white, better flavored flour that retains the health building vitamins and the natural sweet flavor of the wheat.

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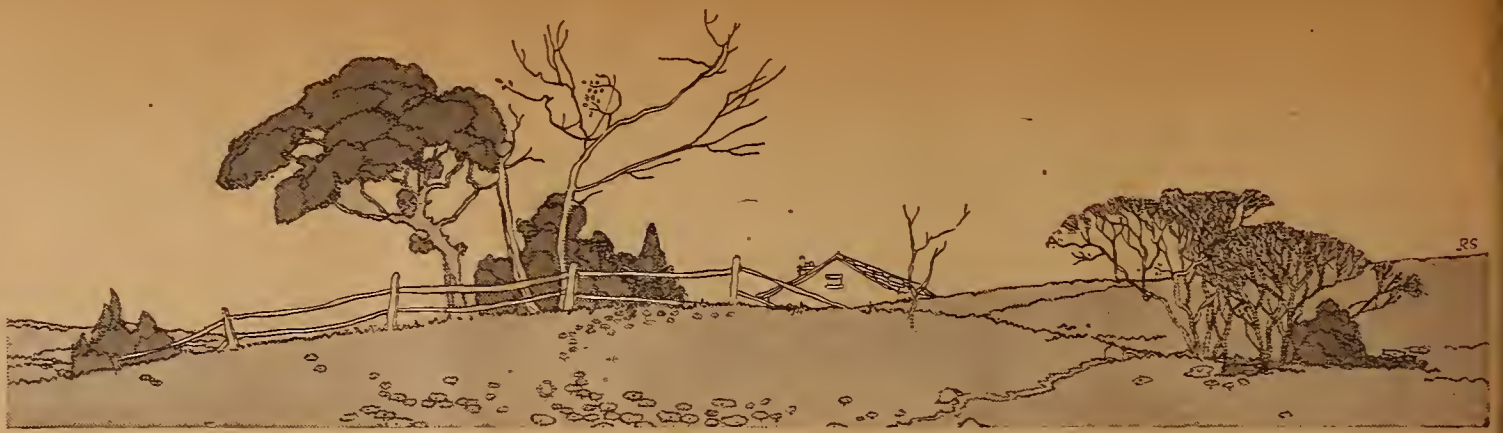
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Colts Are Scarce—How to Save Them

By Dr. W. P. Shuler of Oklahoma A. and M. College

TO GET strong, healthy colts and to keep the mare fit is a very worthwhile object. To do this takes some thought and attention. The feeding of such a ration as will supply her demands for energy, and in addition allow ample nourishment for the development of the foal, both before and for a short time after birth, together with such a regulation of the work as will protect the mare from becoming tired, overheated, or injured in any way, is the whole thing in a nutshell.

You can accomplish this, and will experience little or no difficulty in managing brood mares before, during, or after parturition. There is no secret in raising colts, further than the feeding of a moderate amount of nutritious food and providing sufficient exercise to keep the mare and foal in perfect health.

Moderate work is not only harmless, but it is an advantage to mares in foal, provided proper care be taken not to overload them. It is much better than to keep them tied in the stable, for in that case they suffer for want of exercise.

Contrary to the popular opinion, moderate work is better for brood mares than to permit them to run at large in the fields, where they are exposed to accidents resulting from racing, playing, or fighting. Pregnant mares are usually quarrelsome, and abortion frequently occurs from injuries received from other horses.

If proper care is taken, you can use the mare safely at the ordinary work of the farm up to the day of foaling. As foaling time approaches, it is important that the work be not heavy or the pace rapid. The mare should not be fretted by other horses or by rough, inexperienced hands.

The food for the mare in foal is of great importance, and the quality of the ration is of as much importance as the quantity. Fat production is to be avoided, and the formation of blood, muscle, and bone induced. Foods rich in protein and ash, such as oats, bran, clover, and alfalfa, are preferred to starchy foods, such as corn and timothy hay.

A good ration for the mare at this time is: Four parts ground oats, four parts wheat bran or its equivalent, and one part of linseed meal, with bright clover and alfalfa hay for roughage. If this ration proves too laxative, discard the linseed meal, or, if too constipating, give bran mash occasionally.

THE ration of the mare should be reduced just before and for a short time after foaling, and made more laxative by the addition of a succulent food, as carrots or an occasional bran mash. This should be continued until the mare and foal recover from the ordeal incident to birth.

The mare carries her foal about eleven months, or, more accurately 340 days, although it may vary greatly either way. Fillies have been known to drop perfectly healthy foals at 300 days from the time of service, while older mares have gone 400 days and given birth to living foals. The statement that male foals are carried longer than female foals lacks confirmation.

Because of the uncertainty of the period, the mare should be watched closely from the tenth month until parturition. Place her in a large, well-lighted, well-ventilated box stall free from projections on which she may injure herself or the foal, and in a quiet section of the barn. It is important that this stall be thoroughly clean and freshly bedded. It is a good plan to scatter a little lime about the floor before the bedding is put down, to make things sanitary.

There are certain signs of the near approach of parturition that rarely fail. The udder may become much distended some

time before foaling, but the teats seldom fill out plump to the end more than four or five days before the foal is born. By many persons the appearance of wax on the ends of the teats is considered a certain sign. This generally appears not earlier than forty-eight hours before the foal comes. In some cases, however, the teats may discharge a watery fluid for days before the mare foals. About a week or ten days before foaling there is a marked shrinking or falling away of the muscular parts at the top of the buttocks and back of the hips. On the other hand, occasionally a mare may give birth to a foal without any of these signs.

When birth is normal, let both mare and foal alone, as they will come through all

How I Kept My Boy Interested in the Farm

FOR the three best letters on this subject from readers of FARM AND FIRESIDE we will pay \$12, \$8, and \$4 respectively. (You need not be a subscriber.) If you worked out this problem of keeping the youngsters happy at home, why not tell the rest of us about it? Maybe it will help us do the same. Address, Boy Contest Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City. Unused letters cannot be returned unless stamped addressed envelope is enclosed.

THE EDITOR.

right. In normal presentation the forefeet appear first, with the bottom of the hoofs down, and then the nose. It is well to have someone near by to render assistance if needed, but the mare should not know of his presence. The navel cord of the foal should be disinfected at once. To do this, some persons use a saturated solution of boric acid, and then dust the cord with boracic-acid powder.

When birth is difficult, or if there is an abnormal presentation, a veterinarian should be summoned at once, as difficult parturition is likely to prove fatal to the foal.

When birth is normal, the mare will usually tend the foal, though it may be necessary to aid him to get the first meal. When the mare has rested, offer her a drink of gruel made from a pound of fine oil meal in half a bucket of water from which the chill has been taken. The mare should be given a few days' rest, though she should be exercised after the first few days, particularly if she has been at moderate work up to the time of foaling. If all is well, the mare may be put to moderate work the ninth day after foaling.

Saving Planting Losses

IHAVE been giving close attention to the heavy death list of newly planted trees. My observation is that it is not uncommon for half of the nursery stock planted to be dead at the end of the year. Of course, the nurserymen are generally wrongfully blamed for many of these losses.

Many people who buy only a few trees and shrubs have not learned that nursery

stock, when taken from its wrappings, should be "heeled in" in moist ground if not planted immediately; and if it is to be planted the same day, all roots should be covered with wet straw, leaves, or wrapped in wet burlap or blankets and kept covered until placed in the ground. If all nursery stock were kept protected as here described, and afterward watered thoroughly for several weeks until well established, little loss need be experienced. — BLAKE SMITH.

Are You Rich or Poor?

"MANY misinformed people in the cities are laying the blame for the high cost of living on the farmer," says R. F. Taber, specialist in rural economics at the Ohio State University. "It may throw an interesting light upon the situation to know that prior to the war the average labor income of a large group of typical farms in the dairy region of northeastern Ohio was \$346."

"Another group of over 300 farms, mainly in the rich corn and tobacco sections of southwestern Ohio, showed an average of \$629. In the hill country of southeastern Ohio a survey for seven consecutive years on the same farms showed an average labor income during the whole period of \$272. By labor income is meant the amount the farmer has left after deducting farm-operating expenses, including 5 per cent interest on investment. In addition to the amounts mentioned, the farmer also has what the farm contributes to the living."

"It is probably a fair statement that the salable products of the farm have nearly doubled in value during the last few years. A point that is overlooked oftentimes by those who do not know the farming business is that farm expenses have increased along with farm receipts. With feed and labor the increase has been even higher than with receipts. There is little question but that the farmer who was established in the business has made an increased income during the war. Such an increase in view of incomes prior to the war does not justify the profiteering charge."

Farm Animals Decreasing

ASLIGHT increase in the number of milch cows and mules and a moderate decrease in the number of other cattle, horses, sheep, and swine are the outstanding features of a survey of livestock on farms and ranges of the United States on January 1st, as compared with a year ago.

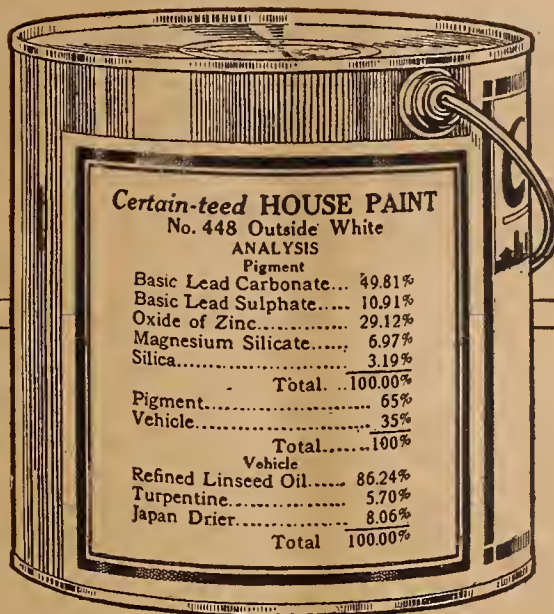
Milch cows have increased about 272,000 head, or 1.2 per cent; mules increased 41,000 head, or 0.8 per cent; "other" cattle decreased 700,000 head, or 1.6 per cent; horses decreased 373,000 head, or 1.7 per cent; sheep decreased 251,000 head, or 0.5 per cent; and swine decreased 1,675,000 head, or 2.2 per cent.

The estimated number of animals on farms and ranges on January 1st are 21,109,000 horses, 4,995,000 mules, 23,747,000 milch cows, 44,385,000 other cattle, 48,615,000 sheep, and 72,909,000 hogs. The total of all animals is 215,760,000, which is 2,686,000 head, or 1.2 per cent less than a year ago.

The total value of all farm animals on January 1st was about \$8,561,000,000, which is a shrinkage of \$266,000,000, or 3 per cent, compared with a year ago. It is an interesting observation that mules and milch cows, which increased in numbers, also increased in value per head; whereas all other classes of animals decreased in value per head, as well as in total numbers.

Food and Farming Weekly.

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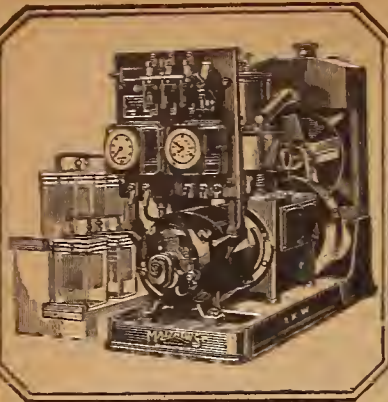
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CERTAINTY OF QUALITY AND GUARANTEED SATISFACTION - CERTAIN-TEED

It Will Pay You to Start the Late Garden Carefully

By F. F. Rockwell



What is a Watt?

A WATT is a practical unit of electrical activity or power. One horse power equals 746 watts. In connection with an electrical light and power plant the watt is the measure of what you get for your money. Watch that Watt.

Buying a plant that is rated on capacity of generator and batteries combined is like buying a pound of tea, six ounces of which would be package with only 10 ounces of tea.

MATTHEWS
FULL
AUTOMATIC
TRADE MARK
ELECTRIC LIGHTS
AND POWER PLANTS

are rated on generator capacity ALONE. Matthews "FULL Automatic" means that the "Automatic Caretaker" automatically starts recharging the storage batteries long before they are exhausted to the danger point and stops recharging when the batteries are full. It also prevents damage from overloading batteries by automatically starting the generator which takes ALL the load until it is overworked when the batteries are automatically called back to help.

Any plant that does less than this is NOT full automatic, and is out of date the day it is installed. Six sizes, \$445 upwards. Ask the Matthews dealer for Demonstration.

Write for Free Booklet "K"
Full Automatic—starts and stops itself—not merely self-starting.

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IF YOU WANT TO SELL OR EXCHANGE your farm, city property, land or patent, no matter where located, write me.
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These Men Protect Your Planting

SOME four hundred of America's leading Nurserymen have linked themselves together to protect you in your buying of trees and plants.

Whenever you buy nursery stock look for the TRUSTWORTHY trade mark, shown above.

It is used by members of the American Ass'n of Nurserymen.

Membership in the Association is strictly restricted to firms whose methods and standards come up to the Association measure.

Buying from any member of this Association, you have the Association's assurance of satisfaction back of your purchase.

How the Association Vigilance Committee means your protection, what the Association is, and where you can get trustworthy trees and plants, is all told in our Booklet, "Looking Both Ways Before You Buy Nursery Stock."

We will gladly send a copy on request.

American Association of Nurserymen

General Offices: PRINCETON, N. J.

LAST month I told about the importance of getting the early vegetable crops in early. When it comes to the late or "tender" things, it's just as important to wait until conditions are suitable. Put in too early, they may grow; but once checked, they become stunted and devitalized. I've had second plantings of sweet corn and lima beans not only go ahead of a crop from the same seed, on the same soil, planted two weeks previous, but actually yield earlier.

The tender crops usually grown from seed include sweet corn, beans, lima beans, okra, cucumbers, squash, melons, and pumpkins.

It's very important to time the planting of these things so they will escape injury from late cold snaps, and yet get a good strong start before dry weather comes. It's not safe to go by dates, because they vary from year to year, even in the same location. Watch for the little oak cones, or wait until the apple trees are in full bloom.

In addition to the things mentioned above, there are tomatoes, peppers, and eggplants, which are set out as growing plants. These are procurable by the dozen or hundred, in almost any locality. Of course, if you have a cold-frame, you can raise your own. It has been my experience that plants grown in pots take hold so much more quickly, and are so much more certain to succeed, that they are well worth the slight difference in price over plants grown in frames or in flats.

Hills That Assure Success

All of the late vegetables, with the exception of dwarf beans and okra, are generally grown in hills. Being more or less tropical in their nature and requiring a quick, strong growth, they well repay a little extra care.

I always try to have an ample supply of hen manure. If I don't have enough, I supplement it with several wheelbarrow loads of the richest old barnyard manure from the bottom of the pile. If this is at all lumpy, I put it through a coarse gravel screen. This will give fine, even material, that mixes readily with the soil. The plants get the full benefit of such manure. I've seen coarse, lumpy manure turned out in the fall in practically the same condition as in the spring, the plants getting little good from it.

Just before I plant pole beans, melons, cucumbers, or squashes, I prepare the hills by digging the soil out three or four inches deep for about 20 inches square, and then mixing in three shovelfuls of the sifted manure. Then I fill the soil in on top of this, mixing a couple of handfuls of bone meal or tankage with it. It's easy to prepare the few dozen hills that are needed in the home garden—and they will certainly grow with this stuff under them.

For tomato plants, peppers, eggplants, and sweet corn the hills are made by opening up a small hole with a spade (you'll find that a lot quicker than a hoe) and dropping in a handful of the compost and of bone meal. This is mixed with the soil when the plants are set, so their roots don't come in direct contact with it.

Paper Pots for Earlier Results

For several years I have had a few extra early hills of melons, cucumbers, summer squash, lima beans, and even sweet corn, by planting them in square paper pots, about three weeks before it would be safe to plant them outside. Any old frame, with a couple of window sash over it, will do to protect them from a chance late frost. The paper pots cost very little; the four-inch size is right for this purpose.

Pack the pots in close together, put in half an inch of sifted manure, and then fill nearly level with light soil and manure mixed. Plant several seeds in each, and keep well watered. As soon as the third or fourth true leaf appears, thin out to two or three plants. When setting out, don't remove the pots—merely tear the bottoms enough to let the roots through readily. In sections where the cutworm does much damage, the paper pots, pulled off until only about a third of them remains in the soil, make effective barriers against this pest.

As soon as the early crops are well started, they should be thinned out. I do this as early as possible, because I've found that a few days will make a big difference. The smaller the plants are when this is done, the better. When they get big enough to crowd, it doubles the work of thinning, and the ones that are left are disturbed and checked.

Beets, carrots, turnips, lettuce, parsnips, and the like, should be thinned out to one or two inches apart the first time, and given more room later if they need it. Many times crops amount to practically nothing because this is neglected. Every extra plant is as bad as a weed and must be eliminated to leave space for the others to develop fully and rapidly.



No farm work will repay you better than time spent in the garden

County Agent Contest

Fifth Prize

Winner: W. G. Yonger
Lexington, North Carolina

WHEN the county agent came into our community I did not have any use for him, for I had been reasonably prosperous in my farming operations, was fairly well satisfied with our community life, and did not see how an outsider was going to come to my farm and tell me how to do things better than what I was doing them, but before another three years had passed I took another view as regards the county agent.

My principal crops were wheat, corn, red clover, grass, and a small acreage in potatoes, both sweet and Irish, and vegetables. Clover had been growing very successfully in the short rotation of wheat and clover, and the longer one of wheat, clover, corn, and soy beans. I considered the red clover the clue to my success in keeping up my crop yields, until the last two or three years, when the season seemed to be against the clover, for it failed to make the usual luxuriant growth, and the grain yields were reacting in the same proportion.

The agent was writing a column weekly for our local paper, and I was reading them to see what tomfoolery he was putting before the folks when I chanced to read one day, just ahead of haying time, the question, "Is your clover as good as it was ten or fifteen years ago? If not, there must be a reason, and that reason was most likely an acid soil in need of lime." I looked over my clover field that very day, and found that I did not have over 50 per cent of a crop, and had a serious situation confronting me. If my soil needed lime, the question was what kind and how much. This same article stated that the agent would be glad to advise farmers first-hand as to the lime needs for those acid soils.

A neighbor passed by that evening, and asked if I had seen the clover field over at

the Hargrove pike that was limed a year ago. The clover, I was told, was the heaviest in that whole neighborhood, and the land was very ordinary at that. I remembered then that the agent had had some kind of a field meeting over on that place a year before, but I was too busy to attend.

I called the agent on the telephone that evening after supper, and asked him if he would come to my farm in the next couple of days. He came, and looked at my soil in several places, and advised me to use lime on all of the land that I expected to sow to clover that fall. This was done, and my clover of years past appeared again, and, better still, I was induced to prepare for alfalfa, and now my alfalfa is the most profitable crop that I grow, a crop that I thought impossible four years ago.

Sixth Prize

Winner: Arthur A. Howell
Bethpage, Tennessee

I NEVER thought much of the county agent until two years ago. I thought his work was a mere joke, but I have since learned quite differently. Through his advice I made more corn per acre than I ever did; made more clover per acre, and better clover.

He showed me how to make two blades of grass grow where one grew before. He caused me to invest my money in purebred livestock. My purebred hogs have been worth more to me than I ever hoped them to be, and if he had not showed me the way I would have had old scrub hogs now. He convinced me that I was too far behind to ever succeed, and through his teaching and help I am 100 per cent better off, both mentally and financially.

Even if he had not shown me how to farm as his methods taught, or use purebred stock, he got me to read good farm papers and bulletins on farming, and that alone would have caused me to try his methods. But through my county agent I am wiser and richer. Why, I never thought of planting soy beans in corn to hog down until he advised me to try it and keep a record of gains made!

Well, I more than made big money on what I had invested. He helped me to get pure seed. He showed me where I could make more money out of hogs by having green pasture eight months in the year for them to help the corncrib out. He showed to me that the two-eared variety of corn produced more per acre than the single-eared kind.

Well, in fact, he has been to me one great help to success as a farmer, and I shall always consult with him about farming and raising livestock. County agents working with our commissioner of agriculture have been life savers to Tennessee and have caused more boys to stay on the farm than would have otherwise. Give us more of them.

Saving Work in Seeding

IT IS inconvenient to fill the drill box every round, and especially when a tractor is used. Here is a simple way to make an extension on a drill box: Take two 1x6-inch boards the length of the drill box, and two 1x6-inch boards the width of the top of the drill box to use for ends. Nail them together, forming a box, using 2x2x6-inch blocks in each corner to nail to. Brace the box in center with good, stiff strap iron. It is necessary that you have the exact width of the top of the drill box so the cover will fit on the extension.

Take a piece of strap iron one fourth inch thick and one inch wide; have your blacksmith cut twelve pieces three inches long; bend each one of them back one inch, forming the shape of an L, and drill two holes in the long part and one in the short part of each. Remove cover from drill box, and bolt on extension by placing three of the L-shaped irons in front of drill box, and three of them on the back of box. Bolt the strap irons together and fasten cover to extension box. This will nearly double the capacity of the drill and save a great many stops and valuable time in the planting season.

O. R. J., Nebraska.

WINCHESTER

1866

1920



SERVICE AND PROGRESS

by J. E. OTTERSON

PRESIDENT WINCHESTER REPEATING ARMS COMPANY

WHEN we decided to branch out into the manufacture of other lines of products, we were not satisfied that we ought to put the name Winchester on Cutlery—Tools—Fishing Tackle—Skates—Flashlights.

Here was a name which had come unblemished through fifty-three years of the cleanest kind of business dealings.

Some held that it would lower the prestige of this name—that we would destroy its significance—if we applied it to more than one line of products. This was given no small consideration.

We wondered if it would not perhaps be better to put these new products out under a new name, such as "Eagle," or Victory," or something similar.

We have finally decided to call them Winchester. And to make this name mean everything it now means on Guns and Ammunition.

We will not put this name on any product until we are sure that the *quality* is such as to entitle it to be stamped with the name.

And so when an article is handed you with Winchester upon it, it will carry our assurance that it is up to Winchester standards.

* *

When we decided to establish a series of local retail agencies, it was a very great question whether we should let dealers throughout the country put the

name of Winchester on their stores. We determined not to give this privilege indiscriminately.

We have picked out a responsible dealer in each town and offered it to him. And we do not want him to take it unless he appreciates it, and takes the responsibility that goes with it.

If he feels that he can make the Winchester Store stand in his community for fair, honorable, clean-cut business dealings, then we want him to come into this proposition.

* *

On us rests the heavier responsibility of maintaining the prestige, significance, and high standing of the Winchester name in the actual *manufacture* of these new products.

It is with greatest confidence in Winchester artisanship, in Winchester methods and Winchester manufacturing *purpose*, that we have taken this momentous step.

* *

In committing the Winchester organization to the making of these new products to bear the Winchester name, and in extending the use of that name to retail stores, I personally have assumed a great responsibility to the American people.

I feel this obligation keenly.

My confidence in receiving your approval is secure—knowing all that Winchester has done and can do.

Your Job—and Ours

Every day last year, according to Government figures, Americans ate an average of:

Over 19,000,000 pounds of dressed beef.
Over 1,750,000 pounds of mutton and lamb.
Nearly 28,000,000 pounds of pork products.
Over 5,500,000 pounds of chickens, ducks, etc.
Over 63,000,000 eggs.
Over 4,000,000 pounds of butter.

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[CONTINUED FROM PAGE 13]

cutthroats; and I knew, too, if they saw me they would hide like chipmunks.

But I worked my way through the alders, as near the bank as I could get, and then, standing out of sight some three feet back from the edge, got out a short length of line and made a sort of bow of my rod, with the line as a string. Choosing a crack in the alders, I released the line, when it shot out and dangled over the pool. Lowering the tip, I twiddled the fly on the surface, when, biff! a two-pound cutthroat took it, and I leaped through the alders into the pool, moccasins and all, so as to get room to play in. He tasted mighty fine!

I NEVER indulge in an elaborate outfit. My rod is a plain five-dollar split bamboo affair, which will get me out about sixty feet of line—and you are lucky to get room enough for backcast to use that much. It is nine feet long, weighs five ounces, has snake guides, cork grip, with a coved nickel-plated ferrule at the end of the grip, which makes a nice change for your thumb when fatigued with casting on the cork.

The reel seat is on the butt, of course, and the reel itself a cheap, single-click, hard-rubber affair that cost \$1.50, and used to hold line on, for I seldom use it in playing the trout. "Stripping" is much better—that is, drawing in the line through your left forefinger with your right hand. Your forefinger holds the line against the grip when you make a fresh grab for more line with your right. When the trout pulls so hard that either the rod is going to break or the hook pull out, release your forefinger slightly and let him have some line.

My line is the only expensive thing I ever indulged in, for that is what you cast, and it must be good. It is size E, double tapered, English braided, and oiled line, thirty yards long, and cost \$7. I use six-foot gut leaders, and small No. 12 or No. 10 eyed flies, tied dry—that is, so they will float.

All the old standbys—Coachman, Cowdun, March Crown, Grizzly, King, Parmachene Belle, etc., are now tied dry, and do very well on our Eastern streams, while a few English flies, Pale Evening Dun, Whirling Dun, and Iron Blue Dun have served me well for special lights. I seldom use the wet fly, as the dry is so much more effective and better sport, for you can see it all the time. But when they are not rising you have to go down after them with a cast of wet flies, two or three of them instead of one only, as with the dry fly.

Again, early in the season, or in the roily waters, there is nothing to beat worms or real minnows—alive or dead—or artificial ones, like the Devon, beloved of big trout. On such days, me for the little crescent-shaped tin bait box on my belt, for there is no use wasting your time with flies when they are not taking them.

FOR outfit, I use ordinary rubber hip boots, with leather wading sandals on them. These sandals cost about \$3 a pair, and have hobbled nails, without which your progress along the stream is apt to be too precarious and slippery to avoid less than impromptu sitting-down. And me for the good old flannel shirt, with plenty of freedom for arm play.

The canvas coat is all right, but too hot and too bulky a burden; and there is no getting rid of it when you don't want it. I take along instead a light gum raincoat, folded up, in bag or creel, in case of thunder showers that come up—as they always do in the mountains.

Wool trousers; a pair of noisy suspenders to hold them up; a belt with a hunting knife on it, to cut flies off the leader or cut a forked branch to twist down a hung-up fly; a small bottle of dry fly oil, attached to a pocket button on your flannel shirt; a tin fly box in hip pocket, with half a dozen each of six kinds of flies stuck in the cork bottom of it; a landing net, attached to a rear belt strap by a snap hook, and also to me by two feet of cord so it won't float off downstream while I drop it to play Mr. Trout some more; and a creel or a canvas bag slung over shoulder, with my lunch inside in a water-proof packet—and I can go all day, covering some four miles of trout stream in freedom and comfort.

As I am a smoker, matches, tobacco, and pipe find their places in various pockets. And on bait days the tin, crescent-shaped box, well stocked with the agile anglerworm and the clammy minnow, is sure to be adorning some part of my belt.

That is all the outfit you really need to go a-trout.

My Self-Feeder Pays Me Well

I AM one of the users of a self-feeder. Mine is not an expensive one. I made it myself. My first experience with it was with 16 hogs. None of them weighed over 150 pounds. I made it five feet long, and it fed from one side only. There are two compartments in it. I thought probably it would be too small, but now I see that it was plenty big enough. There is only one reason for having more room, and that is to allow a larger amount of feed to be dumped in at one time.

As a matter of fact, a feeder of this kind is used all the time, and there are seldom more than two or three pigs eating at one time. So what is the use of having a feeder so big? I don't know of any reason. And what is the use of five or six compartments for the pigs to look into when they feel a little hungry? I don't see any.

The original self-feeder advocate in this country is still alive. He didn't know what a balanced ration was, but he took slats out of the lower part of his corncrib while his pigs were on pasture. They helped themselves whenever they wanted to.

I think this must have been twenty years ago at least. I can just remember that the neighbors said he would have a bunch of sick hogs, but he didn't, and they grew mighty well too.

So this fall, when I got my 16 pigs on clover, I threw the corn for them over the fence every couple of days, and kept the self-feeder full of tankage. I hauled a tank of water out, and let it drip a little all day into a trough for them. So they had water and corn and tankage with clover forage. What more could a pig want?

My feeder cost in actual material purchased about \$3. That was for matched siding used in it. The 2x4 stuff was on the farm, and the roof was also a piece left from roofing the hen house. Most farms have this same material lying around in a pile, so just why we should pay \$20 or \$30 for a feeder is not quite clear to me. My hogs grew faster than I ever had any grow before, and I know the feeder paid. I also think that a \$3 feeder made them grow just as fast as a \$30 one would. So I'm \$27 ahead, and that is just about the price of another pig—at present prices.

EARL ROGERS, Ohio.

"How I Became the Owner of a Farm"

[CONTINUED FROM PAGE 6]

debt for a new one. So we were blessed that year with a good crop, and I made enough to pay all of my obligations. I had my young team of mules, a new wagon, and a few dollars left to start another crop on, and once more I dreamed of a home of my own.

In the future I rented the same land, and worked on three or four years, saving a little each year. In 1914 came a bad drought, and I did not make enough to pay the rent on the land. By this time I had two children—boy and girl—large enough to help me, right smart children. So I took what money I had saved, bought another pair of mules, and had to buy feed for four head. I got a man to share crop one team. We all worked hard to recover from the drought the year before, and had a fine crop. But on August 15, 1915, came the largest overflow that was ever known by the oldest residents. So we lost all of our cotton crop, and money that I had saved was spent.

But I was lucky enough to save enough feed to make another crop. So I told my wife that we wouldn't let the overflow discourage us, but would try again. So I farmed the same land three years more, making good crops, and with prices going up I saved enough to buy a good upland farm in the same neighborhood we moved from. I paid \$4,500 for a place of 250 acres—70 or 80 in cultivation.

The place once belonged to my grandfather, but had been out of the family for fifty years. One room of my house Grandfather built between 1855 and 1860, but it is still in good condition. I had my teams, wagons, tools, and enough to run us a year after I paid for the place, besides a few dollars for emergency. There may be men that have had a harder time than I have had to own a home of their own, but I will say that they who appreciate a home any more than I do, are scattering and far between.

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Don't wait until five minutes before harvest time to buy needed new harvesting equipment, or repairs to put old machines in first-class working order. New machines are scarce just before and during harvest. Dealers' stocks are sold out; manufacturer's warehouses empty; transportation congested and uncertain; labor hard to get and high-

priced. Repairs are just as scarce—and dealers are too busy setting up and delivering new machines to give proper attention to repair orders.

Safeguard your grain crop *now*, while you have time, by ordering needed new time- and labor-saving harvesting equipment and genuine IHC repairs from your nearby International full-line dealer. Place your reliance in machines bearing the time-tried, service-proved names—*McCormick, Deering and Milwaukee*. These are names your father and grandfather knew well—and trusted. The reputation of this Company assures you that they are today as fully worthy of your confidence.

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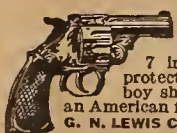
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Our Letters to Each Other

This is where we take a few lines every month to talk things over, so if you've got anything on your mind, let's hear from you

THERE are so many serious subjects on the other pages in this issue that by the time I got through to this page I was sort of fed up on seriousness, and thought maybe you would be too.

So, if you like, we'll just have a good time to top off with here, and talk about any old thing that comes up and happens to sound interesting.

For instance, I got a letter from Jennie M. of Kansas the other day, asking me why the opal has such a bad name among jewels. I didn't know, but I wrote to a friend in Washington who does, and this is what he said:

"The superstition which causes people to regard opals with awe as the cause of ill luck, and even death, is due to a peculiar observation made many years ago. Opals were considerably in use in Venice during the plague, and it was noticed there, in the hospitals, that before death the stone would sometimes brighten upon the victim's finger. It never seemed to occur to the people that the illness could produce a glow of color. They took it for granted that the stone occasioned the illness.

"As a matter of fact, opals are affected by heat, even by that of the hand, and the fever, being at its height just before death, caused the colors to shine with unwonted clearness.

"This confirmed the superstition, and to this day there are sane and able-bodied people who believe that a chip of this stone in the house can cause calamities."

Cheap, Eh?

Next on the pile in front of me I find a note from J. J. W. of Wisconsin complaining that his land rent is going to be raised when he renews his lease, and asking if he can't make arrangements through the Federal Farm Loan organization to buy it outright. A second note from him says he has managed it by borrowing what he could from the Farm Loan Association and getting his landlord to take a second mortgage.

But the interesting thing about this correspondence is the little clipping attached to it, which I found in an English newspaper, which says:

HOW RENT IS PAID FOR SOME OLD ENGLISH MANORS

"Among the many quaint customs still observed in England, the manner in which some persons pay their rent is one of the strangest, and is calculated to make even the modest flat dweller envious.

"The splendid manor of Farnham Royal is held by the service of putting the glove on the king's right hand and supporting the arm that holds the scepter, on Coronation Day. There is no other payment.

"The rental of the manor of Aylesbury is three eels in winter and three geese in summer, besides a litter of straw for the king's bedchamber thrice a year, if he come that way so often.

"The manor of Addington's rental is a pair of gilt spurs, a pair of tongs, a snowball on Midsummer Day, and a rose at Christmas.

"The rental of the manor of Coperland is the holding of the king's head, if needful, as often as he crosses the sea between Dover and Whitsand."

There, J. J. W.! We wouldn't waste any money buying farms if we could rent 'em that way, would we?

The White Birch

Well, so it goes. Now let's see what comes next.

A long, rambling, friendly letter from F. J. C. of Colorado. One line in particular gives me a thrill. He is talking about the mountains, and makes me want to be back in old San Luis Valley, where you can't look in any direction without seeing the encircling giant's pie crust of the everlasting hills. The purples and golds and shadows on those piles of granite at sundown are poetry no pen can ever write.

After all, writing and reading what others have written is a poor substitute for living and seeing and doing in your own

FARM AND FIRESIDE
The National Farm Magazine
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You are invited to ask questions of any or all of these people in their respective fields. State your problem clearly and fully, enclosing a stamped self-addressed envelope for reply. Address each editor care of Farm and Fireside, 381 Fourth Avenue, New York.

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right. Things written are only someone's attempt to put life and experience and beauty on dead paper in black ink—and that can't be done very well when you confront it with actual personal experience. No poet ever really described a mountain sunset as the lover's eyes can see it.

But I am wandering. I meant to answer F. J. C. concerning the white birches he mentions as being so plentiful on our mountains.

The white birch is a beautiful, useful and mighty interesting tree.

It is one valuable forest tree, at least, which is withstanding the inroads of ax and fire. This white birch is sometimes called the paper birch or canoe birch, since it furnished the Indians the material for their famous canoes.

The opinion has been ventured by the Forest Service that more white birch is now growing in the United States than was the case two hundred years ago. It spreads rapidly over spaces left bare by forest fires; but it is a short-lived tree, and does not prosper when it has to compete with other trees for light and soil.

No other wood as hard as birch can be worked with so little dulling of the tools, and this quality, with its handsome color and its failure to warp after seasoning, makes it much used in the manufacture of various novelties. Practically all spoons are made of birch, Maine being the chief seat of this industry.

Eats With His Knife

Now let's hurry down to Texas, where Mrs. L. D. is all wrought up, according to her letter, because her husband, otherwise the dearest, kindest, most lovable man in the world, she says, spoils it all by eating with his knife.

Tut, tut, Mrs. L. D., don't be so petty! It's nicer, of course, according to present standards and manners, to use fork or spoon, but it is only habit and custom that makes it so; it doesn't seriously affect the

real man underneath, as far as I know.

When you and other FARM AND FIRESIDE wives are prone to worry about little things like this, that take patience to train us bull-headed husbands out of, just remember that it wasn't so very long ago that there were no forks and no gentle manners and customs and that even kings and queens ate with their fingers.

The Greeks and Romans, as well as other ancient nations, knew nothing of any such implements, and meat was commonly prepared in stews. Eating was hardly a dainty operation under such circumstances, and we would probably find ourselves overcome with disgust if we were obliged to take a meal in the company of our ancestors of even three hundred years ago. Each man had his own knife, and at dinner seized the joint with his hand and cut off what he wished. The dish was then passed on to the next, who did the same. The knife then cut up the portions into small pieces, which were put into the mouth by the fingers of the hand unoccupied by the knife.

In many parts of Spain, at present, drinking glasses, spoons, and forks are rarities; and in taverns in many countries, particularly in some towns in France, knives are not placed on the table, because it is expected that each person has one of his own, a custom which the French seem to have retained from the old Gauls; but as no person will any longer eat without forks, landlords are obliged to furnish these, together with plates and spoons.

None of the sovereigns of England had forks till the reign of Henry VIII. All, high and low, used their fingers. Hence, in the royal household, there was a dignity called the *every*, who, with a set of subordinates, attended at the meals with basins, water, and towels. The office of the *every* survived after forks came partially into fashion.

About the first royal personage who is known to have had a fork was Queen Elizabeth; but, although several were pre-

sented to her, it is doubtful whether she used them on ordinary occasions.

Not So, Mr. Ellis!

A letter has just reached me from our good subscriber T. J. Ellis of Waynesburg, Kentucky, which warrants the consideration of a serious question on this otherwise non-serious page. Mr. Ellis says:

"In your position you are the adviser of 600,000 families. Did you ever stop to consider the responsibility that places on you, and what harm you might do by wrong teaching? Let me see if I can show you how it looks to a 'Hill Billy':

"The one aim of your paper is to show your readers the shortest road to the dollar, and most of the articles are descriptions of personal experiences in finding this road, and advice as to the quickest and easiest way to get over it.

"All this is bound to accentuate and magnify the dollar in the minds of your readers, and have a tendency to cause them to regard it as the only thing worth while, and its acquisition the only virtue."

First of all, Mr. Ellis, let me say that we on FARM AND FIRESIDE do not feel that any person or group of persons has the right or the wisdom to "advise" and "teach" 600,000 families. And we, for our part, don't attempt it. All we attempt to do is to gather together the best practical experience we can find, on subjects you readers tell us you are interested in, and pass it along to you, to be used or ignored by you as you think best. We don't try to think for anybody. We believe you can do that for yourself. We do try to give you the facts on which to base clear thinking.

If you think that "the one aim of our paper is to show our readers the shortest road to the dollar," you are quite mistaken, for that is not our aim at all. We believe that money-making is a means to an end, not an end in itself.

But money is the medium with which many really worth-while things in life are obtained—such as education, comfortable homes, time- and labor-saving equipment, good books, travel and recreation—and, in order to make those things available, we have got to have more or less actual money. And we believe that anything we can print that will help you to get that money faster will sooner make available to you the good things we have mentioned.

If the individual permits money-making for the mere sake of money-making to become his goal, that is the individual's mistake, and something that we, through FARM AND FIRESIDE, cannot help. What a man's aim and object is in life is his own personal affair, and something we do not feel it is our business to instruct him about. If he makes the mistake of valuing money above health, honesty, education, better farming, and general individual progress, how in the name of high heaven and all that is good could we go about to stop him? No, a man must make his own mistakes, and must himself correct them.

No, Mr. Ellis, I have no desire to enthrone the dollar in any person's mind, least of all in my own. I myself am not a money grubber, though I must earn money wherewith to take care of my family. And I know more than one man in this organization who could earn more money than he earns in editing—much more—and this I know because it has been offered to them. But they like this work better than the work they have to do to earn more money; so they let the greater cash reward go by and keep on doing the work they love. They deserve no credit for that, and claim none. It is their own decision and that of their families. But the point I want to make in mentioning them is this:

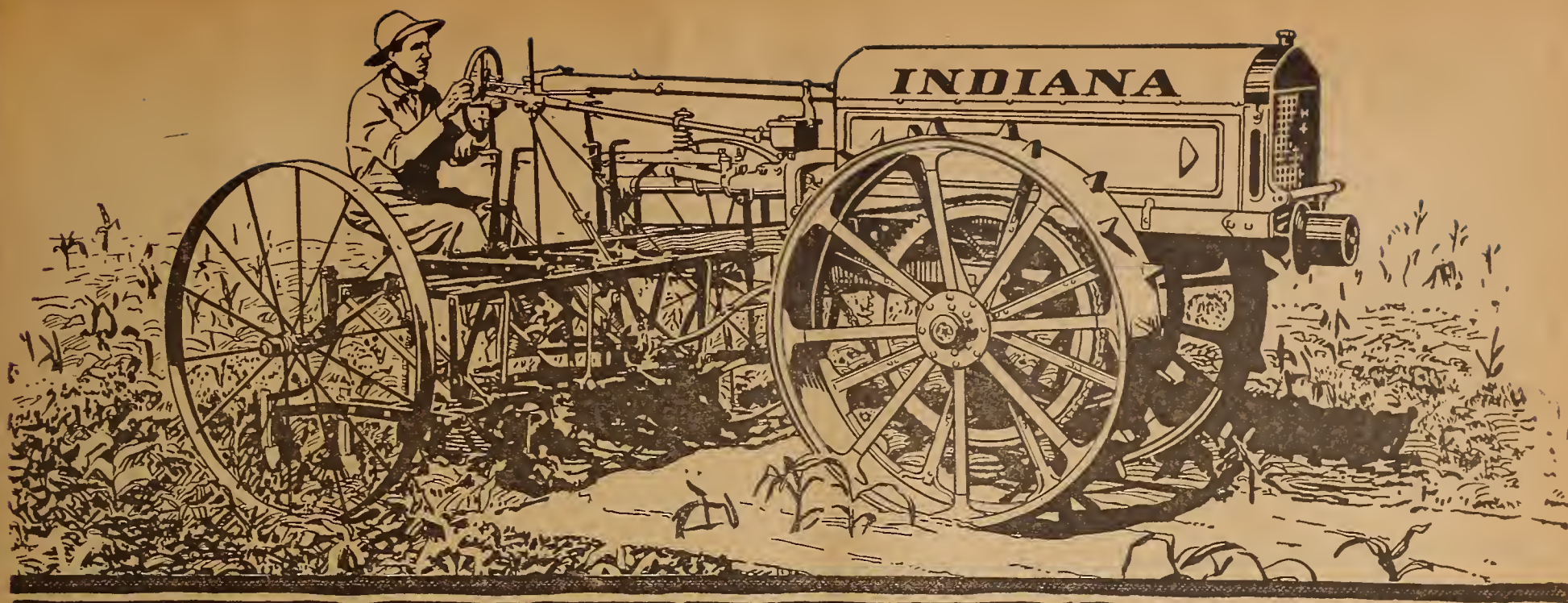
Do you honestly think, from what you have seen of their work on FARM AND FIRESIDE, that they would whoop it up for money-making for money-making's sake in what they print, and not also be money grubbers in their own right?

Thank you for giving me this opportunity to settle that point.

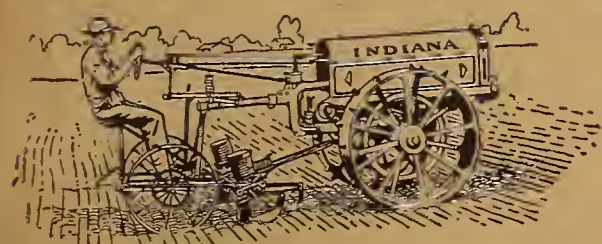
George Martin



Marjorie Young's picture got here too late to be printed as winner of the second prize in the "What My Parents Have Done to Help Me Make Money on the Farm" contest, but we thought you might like to see her anyhow, so here she is, with her mother. They live at Mexico, New York



Why two men and two teams? Get an Indiana now and one man will do!



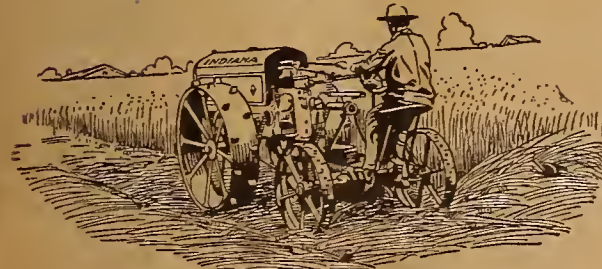
Planting Corn



In the Wheat Field



In Big Corn



Cutting Hay

ON MOST farms one team is all you can use the year around. Extra horses work only during the crop year of 90 to 100 days. The rest of the season you are working for them.

The Indiana Tractor will do the work of four horses and do everything they do. The owner of an Indiana only uses his team during the busy time and for odd jobs and hauling. The Indiana will save the care and expense of your extra horses and the labor of one man. It will give you an hour or two more in the field every day. It is light enough to go on the ground any time horses should go.

Plowing is but 15% of what a tractor must do to replace horses. The Indiana plows more than two teams and attaches to all makes of harrows, discs, planters, one or two row cultivators, mowers, binders, corn-binders, rollers, drills, culti-packers, potato-diggers, and all orchard and vineyard tools.

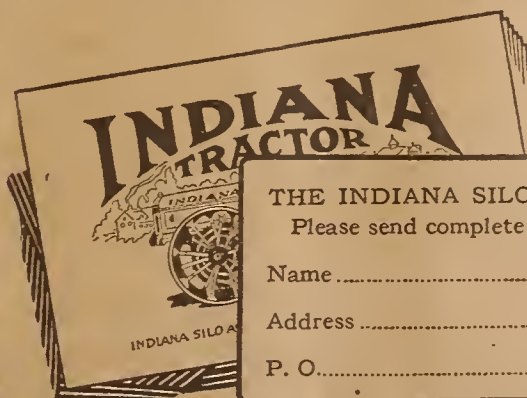
The implements you already have are standard in all row cultivation and cannot be changed. You do not have to buy new equipment in order to use the Indiana Tractor. The hitches are simple and inexpensive. In many operations the tractor will do the work of six or eight horses. The driver rides the implement. It is the all-round single-unit one-man tractor.

Mail the coupon for book of pictures showing the Indiana Tractor actually doing all the work that horses do; and book of letters from users. If you need a silo, we have one for you. We are the largest silo manufacturers in the world.

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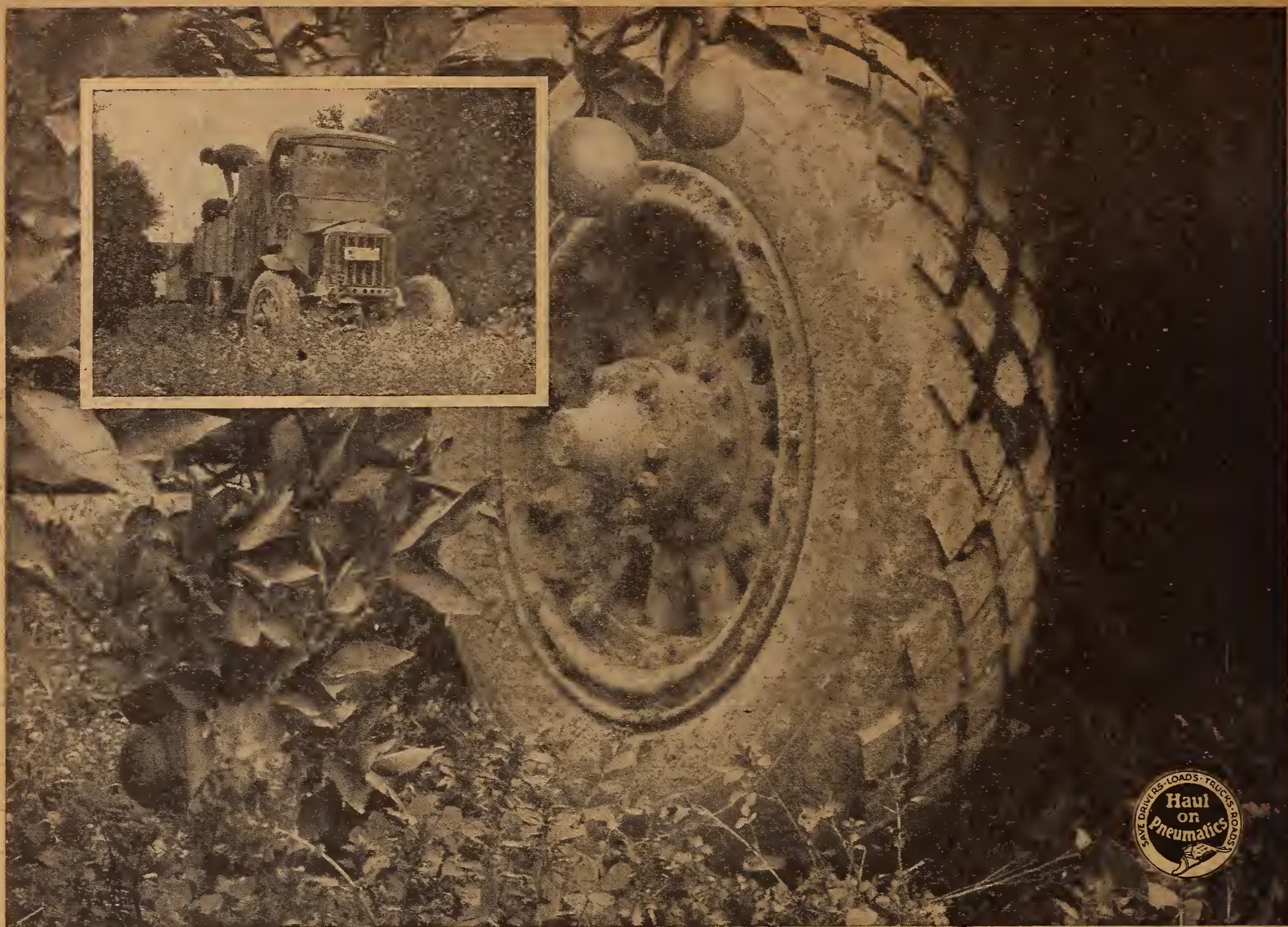
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38

INDIANA
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"The World's Tractor"



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"It is of distinct advantage for us to use Goodyear Cord Tires instead of solid tires on our trucks hauling from orchards, because these big pneumatics track nicely through loose soil or plowed ground and do not really pack it. Solid-tired trucks are assessed \$10 a ton here—pneumatic-tired trucks are assessed only \$5 a ton because they save roads."—A. M. Edwards, of Edwards & Patillo, Fruit Growers and Truckmen, Fullerton, California

THE gripping and agile qualities of Goodyear Cord Tires on trucks have won for them many significant rural endorsements like the one presented above.

Whether an orchard lies in soft soil, or fencing is to be done in a grassy field, or a mud-bottomed hollow separates the back acres, the big Goodyear Cord Tires go through quickly.

So today farmers frequently point to the tracks of these tires in miry hog lots, soggy meadows and acres strewn with fertilizer, where they have made short cuts and saved time many times.

In all parts of the country, the observer can note

crop loads, cushioned on the husky Goodyear Cord Tires, being hauled through sand and bogs, across furrowed earth and up slippery hillsides with impressive ease.

This intense serviceability of the pneumatic truck tire, founded on the supple toughness of Goodyear Cord construction, has been built out of that ceaseless endeavor to improve, which protects our good name.

Now a large amount of information, supplied by farmers and describing the advantages of pneumatic truck tires, can be obtained by writing to The Goodyear Tire & Rubber Company, Akron, Ohio.

GOODYEAR

CORD TIRES



The Standard Spark

Plug of the World

If you were in the market for a motor car wouldn't you welcome the advice of America's leading automotive engineer if he volunteered to aid your selection? You have this advantage when buying spark plugs; for America's leading engineers for years have used AC Spark Plugs as standard equipment on the cars they build. Use the plugs they use—AC.

Champion Ignition Company, FLINT, Michigan

These manufacturers use AC Spark Plugs for factory equipment

Acason Trucks	Beeman Garden Tractors	Cleveland Cole	Fairmont Ry. Motors	Herschell-Spillman	Klemm Trucks	Napoleon Trucks	Pierce-Arrow	Signal Trucks	Tower Trucks
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Acme Trucks	Betz Trucks	Comet	Federal Trucks	H. J. Walker Motors	Kochler Trucks	National	Pioneer Tractors	Speedway Motors	Turner-Simplicity Tractors
Advance-Rumely Tractors	Besmer Trucks	Commonwealth	Flour City Tractors	Holt Tractors	Lailey Light	Nelson	Pittsburgher Trucks	Standard "8"	Union Marine Engines
Abrens Fox Fire Trucks	Blrch	Conestoga Trucks	Frontmobile	Howell Tractors	Leach Power-Plus Six	Nelson Tractors	Porter	Standard Trucks	Universal Trucks
Alsace	Bour-Davis	Continental Motors	F-W-D Trucks	Hudson	Liberty	Nelson-Le Moon Trucks	Premier	Stearns-Knight	United Trucks
American Beauty	Braddon	Curtiss Aeroplanes	Gary Trucks	Hupmobile	Linn Road Tractors	Netco Trucks	Ranger Trucks	Stearns Tractors	VanBierck Motors
American-La France	Bradley	Daniels	Genco Light	Hurlburt Trucks	L. M. C. Trucks	New Britain Tractors	Red Wing Thorobred Motors	Sterling Engines	Veerac Motors
Anderson	Briggs & Stratton	Dart Trucks	Gilde	H. R. L. Trucks	Locomobile	Noble Trucks	Reo	Sterling Trucks	Vim Trucks
Apex Trucks	Motor Wheel	Dehance Trucks	Golden West Trucks	Independent Trucks	Maccar Trucks	Northlite Lighting	Reynolds Trucks	Stevens-Duryea	Voguc
Apperson	(formerly Smith)	Delco-Light	Gramm-Bernstein	Ingersoll-Rand Air Compressors	Malbohm	Oakland	Riker Trucks	Stewart	Walden W. Shaw
Appleton Tractors	Brinton Trucks	Denby Trucks (Canada)	Gray Dort (Canada)	Jackson	Marmion	Old Reliable Trucks	Roberts Motors	Stockton Tractors	Ward La France
Argonne Four	Brockway Trucks	Diehl Trucks	G. B. S. Motors	Johnson Motor	Master Trucks	Onelda Trucks	Robinson Fire Trucks	Stoughton Trucks	Westcott
Associated Engines	Buda Motors	Dodge Brothers	G. M. C. Trucks	Jordan	Maytag	Oshkosh Trucks	Rock Falls	Straubel Engines	White
Atco Truck	Buffalo Motors	Domane Engines	Hackett	J. V. B. Marine	McLaughlin (Canada)	Owens Light & Power Plants	Rowe Trucks	Sullivan Trucks	White Hickory
Austin Manufactur-	Bullock Creeping-	Domestic Gasoline	Hahn Trucks	Motors	Menominee Trucks	Packard	Rutenber Motors	Super Trucks	Whitney Tractors
ing Company	Grip Tractors	Pumping Engines	Hall Trucks	Kalamazoo Trucks	Meteor	Palge	R. & V. Knight	Swartz Lighting	Wichita Trucks
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Avery Tractors	Cameron	Duesenberg Motors	Front Drive	Kearns Trucks	Minneapolis Gasolene	Parker Trucks	Sandow Trucks	S-S-E-Co.	Wisconsin Motors
A & T Tractors	Capital Engines	Duty Trucks	Harvey Trucks	Kent Concrete	Locomotives	Patriot Trucks	Sanford Trucks	Texas	Wolverine Tractors
Bates Steel Mule	J. I. Case T. M. Co.	Dynelectric Plants	Hatfield	Mixers	Minneapolis	Perfect Power	Sawyer-Massey	Tiffin Trucks	Woolery Ry. Motors
Tractors	Chandler	Eagle Tractors	Haynes	Kenworthy	Tractors	Sprayers	Tractors (Canada)	Tloga Tractors	W. S. M. Motors
Beaver Motors	Chevrolet	Elmira	Henderson	Keystone Trucks	Mitchell	Phlanna	Saxon	Titan Trucks	
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Overland

TRADE MARK REG.

Built for All Roads

THE new Overland with the wonderful *Triplex* Springs is an ideal car for any up-to-date farmer to own.

It is a handsome car in which you and your family will take pride. Its black enamel finish is baked on. You can drive the car through the mud and when you wash it off, your car looks like new.

The Overland is built for all roads—for all kinds of driving, in any weather.

The radical new *Triplex* Springs cushion the road shocks and the bumps, protecting not only the driver but the mechanism of the car as well.

* * *

ALTHOUGH the protection of *Triplex* Springs made it possible to build this car light in weight, the quality of material is so high, and every part is so properly harmonized and so exactly balanced, that the Overland has exceptional stamina.

Its low upkeep cost not only includes high

mileage per gallon of gasoline, but an almost negligible expense for mechanical upkeep.

You will find this car, with only 100-inch wheelbase, handy for driving anywhere. You can turn it in a narrow road or park it, when you go to town, in a very small space. Yet because of the *Triplex* Springs it has 130-inch springbase, which gives it the riding comfort of a big, heavy, expensive car.

* * *

BESIDES these great advantages, the Overland has many advantages of convenience, many little things which make it an exceptionally good car for all-around use.

The upholstery, for example, is removable, either in the front or rear section of the car. Thus you can use the car also for other purposes than passenger use.

The equipment is complete from Auto-Lite starting and lighting, to the rain-vision windshield. It is a car you ought to own. Go and take a ride in it.

WILLYS-OVERLAND, INC., TOLEDO, OHIO

Sedans, Coupes, Touring Cars and Roadsters



FARM & FIRESIDE

The National Farm Magazine

JUNE 1920

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DRAWN BY FREDERIC STANLEY

What Can It Do For You?— See page 5



Everlastic "Rubber" Roofing



A recognized standard among "rubber" roofings. Famous for its durability. Made of high-grade waterproofing materials, it defies wind and weather and insures dry comfortable buildings under all weather conditions. Nails and cement with each roll.

Everlastic Slate-Surfaced Roofing

A high-grade roll roofing, surfaced with genuine crushed slate, in two natural shades, red or green. Needs no painting. Handsome enough for a home, economical enough for a barn or garage. Combines real protection against fire with beauty. Nails and cement with each roll.



Everlastic Multi-Shingles

(4-Shingles-in-One)



Made of high-grade thoroughly waterproofed felt and surfaced with crushed slate in beautiful natural slate colors, either red or green. Laid in strips of four shingles in one at far less cost in labor and time than for wooden shingles. Give you a roof of artistic beauty worthy of the finest buildings, and one that resists fire and weather. Need no painting.

Everlastic Tylike Shingles

Made of the same durable slate-surfaced (red or green) material as the Multi-Shingles, but cut into individual shingles, 8 x 12 $\frac{3}{4}$ inches. Laid like wooden shingles but cost less per year of service. Need no painting.



Farm house and outbuilding covered with Everlastic Shingles in the red tone.

Horse sense about Roofing—

ROOFING that won't last isn't worth putting on. For it takes just as much time to lay a "roof-peddler's bargain" as it does to lay the *best* roofing your money can buy. And the cost of labor is a big item these days.

The only way to get your money's worth is to use roofings that are sure to give you long service.

That's horse sense, isn't it?

You can't go wrong if you use Barrett Everlastic Roofings. They have back of them sixty years of manufacturing experience. They sell at a low price, and you have your choice of four styles—suitable for all kinds of steep-roofed buildings.

All four styles of Everlastic Roofings are briefly described here, but it will pay you to send for our booklets, which tell more about them and contain other valuable roofing facts.

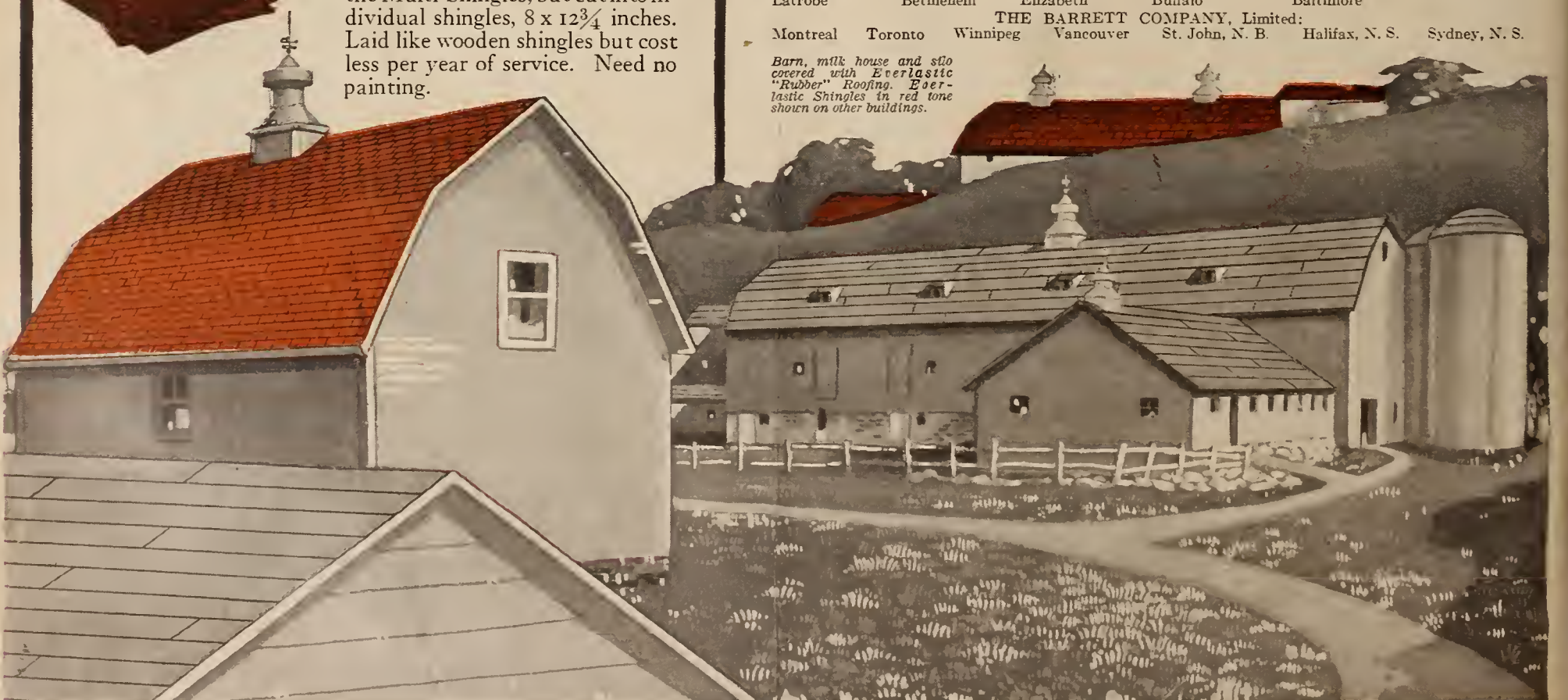
The Barrett Company



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Barn, milk house and silo covered with Everlastic "Rubber" Roofing. Everlastic Shingles in red tone shown on other buildings.



A Service of the First Magnitude

Service
First

HUNDREDS of thousands of car owners now use and recommend the Prest-O-Lite Storage Battery because it can always be depended upon for sure starts, bright lights and freedom from battery bother.

The Prest-O-Lite Storage Battery is more than a box of mysterious elements. It is a positive starting-and-lighting *Service*—a service that starts to work for you from the moment you press your starter or switch on your lights for the first time.

Wherever you may be—at home or on tour—you will find a Prest-O-Lite Service Station close by, ready and willing to keep the service of your storage battery up to its highest efficiency.

Moreover, every one of the 2500 Prest-O-Lite Service Stations, throughout the United States and Canada, extends a helping hand to the users of *all* makes of storage batteries, by free testing and distilled water and by expert repair work at reasonable prices.

At every Prest-O-Lite Service Station you will find a complete stock of repair parts for all makes of batteries, and a full range of new Prest-O-Lite Storage Batteries of every type, size and capacity, including the particular type which skilled engineers have specified as best for *your* car, whatever make or model you drive.

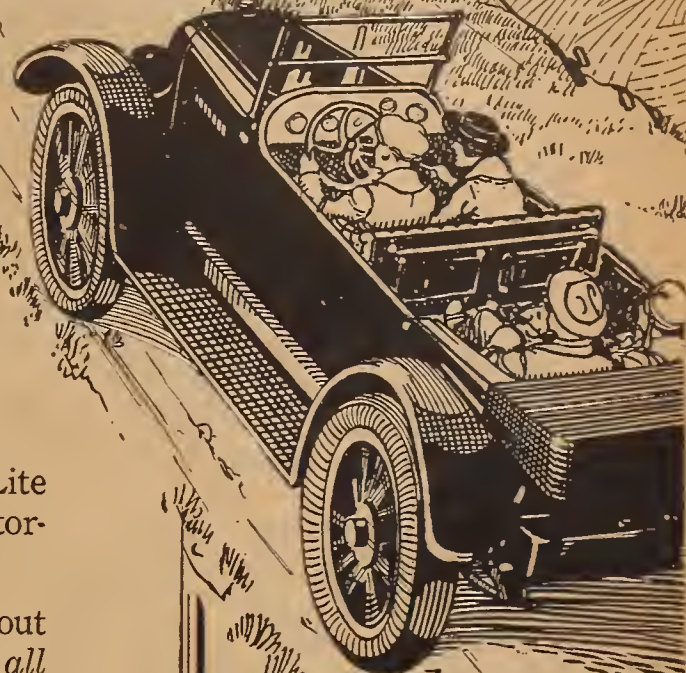
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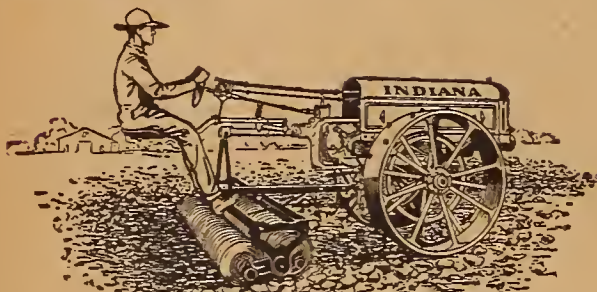
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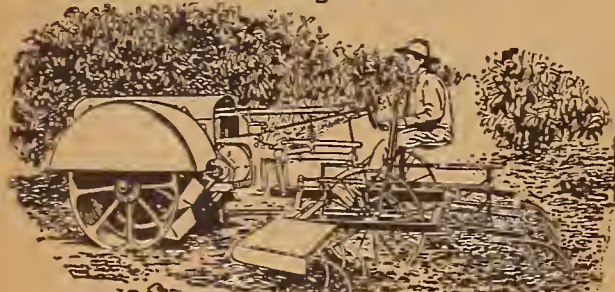
PB-19



Get rid of four horses and one man!



Pulverizing the Soil



In the Orchard



Cultivating Corn



Cutting Hay

INDIANA
ALL-ROUND
TRACTOR
"The World's Tractor"

ARE your horses "eating you out of house and home" in these days of high priced feed? Are they working for you or are you working for them?

You can find use for one team the year around, but extra horses work only 90 to 100 days during the crop season. You spend one-twelfth of your time—an hour a day, a month a year, taking care of them. You spend weeks raising the crops they eat. You work for them about as much as they work for you.

One man and an Indiana will do the work of four horses and two men. It will do every kind of work that teams do. It takes the place of the extra horses, and the cost of gasoline and oil will be \$400 a year less than the cost of the feed the horses eat. The price of four horses and the cost of keeping them a year will more than pay for an Indiana.

Plowing is but 15 per cent of the work a tractor must do to replace horses. The Indiana plows with disc or mold-board and is light enough to go on the ground as soon as horses should go on it. It also operates all makes of harrows, discs, planters, and one and two row cultivators, mowers, grain binders, corn binders, rollers, drills, cultipackers, potato diggers, and all orchard and vineyard tools.

The implements you already have are the only practical size for row cultivation, and you can use them all with the Indiana without expensive hitches. The driver rides the

implement and has the work in front of him. The Indiana is the all-round, single unit, one-man tractor.

John H. Porterfield, of Dodge County, Wisconsin, says: "The Indiana Tractor does all that is catalogued for it and then some, easily developing 7 H. P. on the draw-bar and 14 on the belt. It actually replaces four horses on any farm. Its mechanism is perfect and operation simple. My tractor certainly gives entire satisfaction and I am glad to recommend it."

Charles H. Staples, of Plymouth County, Mass., says: "I have had splendid success with the tractor you sent me and would have nothing else. I do not use a horse on the place and as things look now I do not think we will get one as the tractor is more than satisfactory and it does the work so much faster and better. I use it for pulling all farm tools and running power tools."

Hundreds of users are as satisfied with their Indianas as the two we have quoted. It has been in successful use for four years. And for almost twenty years the Indiana Silo and Tractor Company has been known for dependable products and square dealing. The experience of over 75,000 Indiana silo owners should be sufficient.

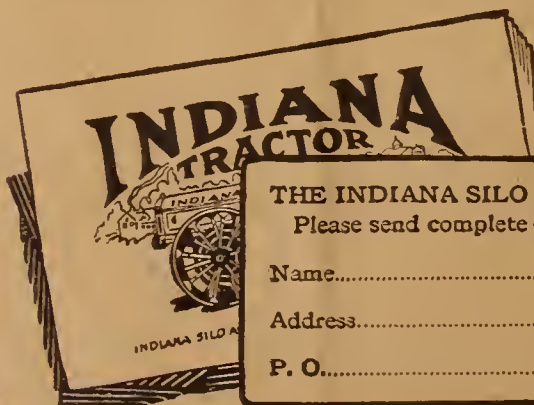
Mail coupon for book of pictures showing the Indiana doing all the work that horses do; and book of letters from users.

If you need a silo, we have one for you. We are the largest silo manufacturers in the world.

DEALERS: This tractor can be used more on more farms than any other. It's the biggest dealer proposition in the field.

THE INDIANA SILO & TRACTOR COMPANY

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THE INDIANA SILO & TRACTOR CO.

Please send complete descriptive matter on the Indiana Tractor, and letters from users.

Name.....

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What You Can Do for the Farm Bureau— And What It Can Do for You

By James R. Howard

President of the American Farm Bureau Federation

THE subject of this article implies mutual interest. It suggests that helpful co-operation which puts the individual in the place of helping himself by helping the other fellow. This has been from the beginning the outstanding characteristic of the farm bureau. Its object is "to promote, protect and represent the economic, social, and educational interests of the farmers of the nation and to develop agriculture."

Important as is agriculture, the biggest industry of mankind, it is passing strange that up to the present, small progress has been made toward the building of large and permanent farm organizations. Many attempts have been made, and in some instances real progress achieved. But eventually these associations would dissolve into memory. Only one of many in existence a quarter of a century ago survives.

Many of these organizations had as their purpose a single motive, which being accomplished, dissolution was inevitable. Others perished, victims of infant mortality due to neglect or malnutrition. Dissensions and discords among members have not been more fatal than have the rocks of radicalism, and political itch among leaders has been highly infectious, and always fatal to the organization.

The farm bureau started in the counties of the various States with no thought whatever of more than a county organization. The county agents took up a number of lines of work or projects which proved of great benefit to both the individual farmer and to the community. This created both individual and community interest and confidence, and the county farm bureau was soon viewed on all sides as a permanent institution.

As county organizations grew in number and strength, it became apparent that many of the problems confronting agriculture which were too big for the county unit to handle efficiently could well be taken care of by a state organization of the various county units. In this way state federations of the county farm bureaus began to be formed more than five years ago, and in many ways have proved their usefulness.

Among the special achievements of these state organizations might be mentioned the promotion of the Dairymen's League by the New York Farm Bureau Federation; the successful fight in opposition to the classification of property by the Ohio Farm Bureau Federation; the activities of the Illinois Agricultural Association in limestone crushers and rock phosphate mines, bringing better and cheaper fertilizers to their membership; in the wool-pulling and

co-operative marketing activities of many States. Probably not a single one of the twenty-eight States now having state organization but what some advanced steps in marketing or some better agricultural legislation can be directly attributed

growth been other than normal. Mushrooming has not been a special project of the farm bureau.

What can the American Farm Bureau Federation do for the individual farmer? The organization is yet too young definitely

secured that will allow them to be handled on an equable basis with other commodities, and will enable the farmers of the United States to compete on a legitimate basis with the farmers of other countries.

2. A bureau of trade relations for the study of commercial conditions between our own and other countries, looking to the expansion and protection of American agricultural interests.

3. A bureau of distribution to investigate means and methods of handling and marketing farm products.

4. A bureau of statistics for the purpose of collecting facts and figures dealing with the production of farm crops and livestock, and for inquiry into conditions which influence the law of supply and demand.

5. A bureau of legislation which shall make a special study of and inquiry into all national legislation proposed from time to time that is likely to affect farmers and farming.

6. A bureau of co-operation for the study of co-operative methods which have proved successful, both in this country and abroad, with a view of evolving standard forms for co-operative agencies of various kinds in connection with state federation work.

Thus it will be seen that a very important function of the federation is to render expert economic service to agriculture—to you.

The time has come when national welfare demands more than a passing thought toward its agriculture, because certain limitations have been reached. Until the present decade our population, our tillable areas, and our industries were all advancing together. Food was cheap because virgin soil yielded its fertility without stint or recompense. But that time has passed.

Hereafter America is to get her basic supplies, if she secures them within her own borders, from land now under tillage. If population increases and industries flourish, as we believe they will, our acres must continually produce more. This calls for fertilizer, with attendant costs. It means labor at competing industrial wage. It means higher intelligence on the part of the farmer himself. It means better roads, schools, churches, homes. All these represent economic expenditures and call for better farm markets.

Hence we have open an enormous problem. The cities demand more and cheaper food to sustain their increasing populace. Industry demands low-priced raw products, most of which are of course from the farm. Labor and capital alike look askance at advancing food prices. Transportation, [CONTINUED ON PAGE 33]

The Kind of a Man James Howard Is

(Reprinted by courtesy of "The Prairie Farmer")

JAMES R. HOWARD, the first president of the American Farm Bureau Federation, is an Iowa farmer, drafted from the ranks to serve as a leader for the great cause of farm organization. In central Iowa, people speak of Jim Howard as one of the best farmers that region affords.

Not only has Howard been recognized as a farmer who could raise as many bushels of corn per acre as anyone, but also as a farmer whose vision was not limited to the things in his own barnyard. Three years ago, when the Marshall County Farm Bureau was organized, he was chosen by general consent as its first president. A year ago, when the farm bureaus of Iowa met to perfect a state organization, Howard was again chosen as president. Now, from county and State, he has stepped into greater responsibilities and opportunities as president of the national farm bureau federation.

Howard lives near the village of Clemons, in Marshall County, or within a few miles of the geographical center of Iowa. It is the same farm, in part, which his father and his grandfather farmed before him, though its size has increased. From the original quarter section of sixty years ago it has grown to 480 acres. Howard thus comes from a family of farmers—people who know what farming is.

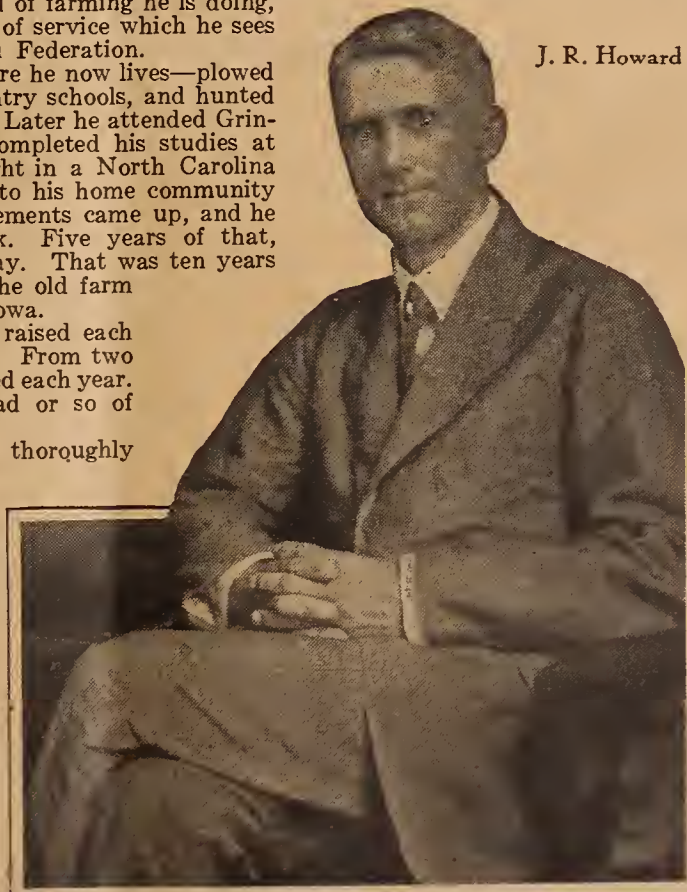
Not long ago—on October 30th, to be exact—I spent a day on Howard's farm, saw the kind of farming he is doing, and listened to his story of the vision of service which he sees ahead of the American Farm Bureau Federation.

Howard grew up on the farm where he now lives—plowed corn, gathered walnuts, attended country schools, and hunted rabbits, just like any Iowa farm boy. Later he attended Grinnell and Penn Colleges, and finally completed his studies at the University of Chicago. He taught in a North Carolina college for two years, then came back to his home community and began farming. Some discouragements came up, and he accepted a place in a country bank. Five years of that, and he went back to the farm to stay. That was ten years ago. In that decade he has turned the old farm into one of the best farms in central Iowa.

From 200 to 300 spring pigs are raised each year and are fed out for the market. From two to half a dozen carloads of steers are fed each year. A band of ewes is kept, and a carload or so of lambs marketed each summer.

Howard's farming operations are thoroughly up-to-date. Crops are rotated in a corn-corn-oats-clover rotation, and the amount of manure applied is enormous. His fields have responded, and it is not uncommon for him to average above 70 bushels an acre on his corn. This year most of his corn will beat 75 bushels.

Three fine boys and a girl make up the roll of the junior Howards, and it is both interesting and pleasing to know that it is for these farmers of the future that many plans of the family are made. A mile from the farm is a splendid consolidated school which is largely due to the efforts of Mr. and Mrs. Howard, and stands as a fine testimonial to their public spirit.



J. R. Howard

Photo Copyright by Harris & Ewing

to the efforts of the state federation. It was not until fourteen States had formed their state organizations that the national federation was given any consideration. Thus it may properly be said that the farm bureau movement, county, state, and national, represents a national growth touching practically all the various interests of the individual farmers, and has developed from the bottom up, rather than built from the top down. In no case has the

to forecast the future program of work or projects which will ultimately be worked out. The board of directors at its organization meeting in Chicago authorized the executive board "to proceed without delay to establish a business organization under direction of trained experts with divisions or bureaus as follows:

1. A bureau of transportation for the investigation of rates, both rail and water, in order that rates on farm products may be

A Preacher-Farmer Who Grew Crops Where Crops Could Not Be Grown

By Gerald B. Breitigam



Here is John Thacker, Oklahoma farmer, just as you might see him any week day working on his farm, or clerking in the store at Roosevelt

AT THIRTY-NINE, with his wife, himself, five daughters, and three sons to support, and with \$1,500 still unpaid of a debt which he had obligated himself to discharge, John Thacker, of Weatherford, Oklahoma, decided to become a country preacher at a salary of \$400 a year.

He had been successful both in farming and as a merchant, but he wanted to be a country preacher. It seemed to him that most preachers and church people held themselves superior to the rest of the world, and he didn't see that the world could be helped that way.

"I look on the country ministry," said he, "as the greatest agency of service to farm people. And I saw that it wasn't being developed in that fashion as it should be. I had ideas on the subject which I just had to try to carry out. It looked like a hard job. I like hard jobs. So I applied for it."

Four years ago he was ordained, and assigned to the pastorate at Roosevelt, Oklahoma, and he and his family moved into the parsonage.

A frontier town of 600 inhabitants, in the heart of the granite hills called the Wichita Mountains, Roosevelt is a farming town in southwestern Oklahoma, near the Texas and New Mexico borders. The Kiowa, Comanche, and Arapaho Indian lands thereabouts have been opened to settlement only since 1902.

Center of a rich cotton and wheat belt, the village is composed of rough, unpainted frame buildings, for the most part one story in height, with the false fronts of frontier architecture pretending to second stories on the Main Street business houses. The streets are unpaved, and, except for the broken corduroy platforms on Main Street, practically without sidewalks.

To-day, four years later, he has discharged all his old debts, made a comfortable living for his family, and has money in the bank. And now he is preparing to build a community center church with an auditorium and social and athletic rooms open to all for parties, movies, political meetings, sports contests, lectures, and community gatherings of all sorts, with money subscribed by the townspeople irrespective of denomination or the lack of it. John On-

stott, the biggest merchant in town, and a man who belongs to no church nor attends any, has subscribed \$500, and will give more if necessary.

How has Thacker done it? He says: "I tried to find out the community wants and its needs. Then I did my best to help the community get them."

BEFORE he could arrive at a place where he could work for community needs, however, Thacker had two pressing tasks to do. He had to provide a living for his family, and he had to impress the people with the fact that he was not the type of preacher they scorned, but a man among men: he had to win their respect. He had a plan whereby he could accomplish these two ends at one and the same time.

Three miles northwest of Roosevelt was an old hardpan farm on which there had never been grown a paying crop. Everybody said it could not grow anything. It was sink land on which a heavy crust of salt, similar to the alkali of the Southwest, had gathered. Thacker proposed crop rent to the owner, and was eagerly taken up. Then he bought four old mules and some second-hand harness, making first payment with a check of \$50 sent him by his district superintendent. With his two older sons, Coy, fifteen, and Amos, seventeen, he started plowing. They tramped the six miles out and back each day, and by May 10, 1916, had 65 acres planted to cotton.

It was a dry year, the first of three that were to make that country almost prostrate. Even on the best of land the cotton crop was poor. All the more on that account was attention drawn to Thacker's efforts. Folks jeered. Even his two sons worked under protest, disbelieving in their father's ability to make a crop.

Folks said nobody but a preacher would be such a fool as to try to farm that piece of land. Others expressed surprise that the preacher actually would go out in the fields and plow and hoe. Some of the "old petrified chronics," in his congregation, shook their heads over it.

Thacker kept right on plowing and hoeing. In due time the cotton came up and began to flourish. People began to visit the farm, wanting to know how Thacker managed to get cotton to grow on that land. Some even affirmed superstitiously that the farm wouldn't grow a crop except for the preacher! Then came harvest. Thacker harvested 15 bales of first-class cotton from his acreage.

When Thacker rented the farm a second year and repeated his crop-growing performance, Roosevelt folk realized it was no accident. They saw the preacher would teach them something about farming, and accorded him a new respect. Men who had never been to church since they had come to Roosevelt, and had been disgusted by the quarrels of the four churches, now took to stopping him on the street, asking his advice, and even dropping in to church.

And by what miracle had Thacker made the old salt sink grow cotton?

"No miracle at all," he explained. "Twelve inches or more below the surface was a fine subsoil. Men around here had not been plowing deep, and hadn't discovered it. If I had set my cotton at the ordinary depth of four or five inches, the salt would have killed it. But I plowed with a lister, a V-shaped plow that throws the dirt both ways. By using four mules and plenty of muscle I was able to plow 12 inches deep. Some of the sourest sinks I drained, but I didn't have time for much of that. Cotton has a taproot which reaches down for its food, so setting the seed in that deep furrow made it possible for the roots to draw sustenance from the subsoil, whereupon the plant shot right through the top salt unharmed. Furthermore, as the subsoil holds the moisture the cotton was able to weather the drought."

The third year Thacker rented a farm nearer the townsite and comprising better soil. But so well had he demonstrated the possibility of farming the old farm that it was rented to another man for a period of five years for cash rent.

The present farm, which Thacker is now starting to till for the third year, consists of 110 acres, 85 in cultivation, and Thacker

gets it all for \$250 a year. The owner, a former physician of the village, is content with the low price because he believes Thacker's community center church project will raise land values, and enable him later to sell his farm at a profit.

By the end of that third year Thacker had paid off all the debt he had carried with him into the ministry, nor had his salary from the church risen above \$500. It was receipts from his crops that did it.

This year Thacker has 35 acres in wheat which he expects to yield him \$1,000. Another 35 acres he has subleased to a cotton grower on a crop rental basis. He expects the crop will be 20 bales, worth \$200 a bale. His crop rental is one fifth, which will give him \$800. From his farm alone, therefore, he expects \$1,800.

"And so," he said at this point, "by my farming I have succeeded in supporting my family, and also in breaking down the prejudice against me as a preacher. Folks found out that I can farm. Now when I talk to them on other subjects, they listen."

"What about your community plant beds?" I asked. I had heard from some of the business men on Main Street about those beds in Thacker's back yard, and how the preacher raised sweet potato, tomato, and cabbage plants in the spring and sold them by the hundreds and thousands at far less than they would cost if imported from a nursery.

"Well," he said, "I've been operating those beds since my second year here, and this year I expect to grow 180,000 plants. Last year I grew 90,000 sweet potato plants and 60,000 tomato and cabbage plants, which I sold at 45 cents a hundred or \$4 a thousand. The gross return was \$650, of which \$300 was net. By my experiments the first year I was able to estimate the cost of material and of my labor and the number of plants that could be grown in a certain space. So I sell at cost."

IN THIS way the people get fresh plants, and for less money than they could order them from outside nurseries, and even cheaper than they could grow them on a small scale at home. I was helped in my contact with folks, for people came from many miles around to get fresh plants and the benefit of the price. I also added \$300 to my income."

Having thus by means of his farming and plant beds won himself a standing in the community, Thacker felt prepared to go ahead more directly with the development of his business. For he regards his ministry as a business, the object of which is to render service to the folks around him.

"The business of the country church and the country preacher," he said, "is not to be of service to the members of the church alone, but to help every person in the community, regardless of age, sex, creed, vocation, or position in life. The church that doesn't reach beyond its own borders doesn't deserve the name."

Thacker couldn't find anybody paying any attention to the boys and girls of Roose-

velt. So two years ago he organized a Boy Scout Troop and a Group of Camp Fire Girls. His oldest daughter, Ruth, is guardian of the latter. Opposite the parsonage, on part of the ground where shortly the community center church is to rise, Thacker and the boys built a "hut." It is a one-room frame structure with a great fireplace of native granite at one end. Here Thacker, who has an uncanny handiness with tools, gives the boys manual training instruction. The boys also engage in gardening and poultry-raising.

OF COURSE," said Thacker, "some of the 'old chronics' say I waste time and expense on these boys, and that they won't help a red cent toward such foolishness. But let a boy happen to get into trouble and the condemnation of these same 'old chronics' is simply awful."

As for the Camp Fire Girls, to realize what a boon their formation was to Roosevelt one needs to know the drab, lackluster life of a girl on the frontier—no amusements, no wholesome outside activities, nothing but school and housework. Now the girls do beadwork on special looms, weave pine needles and raffia grass, study domestic science, take hikes, go fishing, cook over camp fires, and altogether enjoy life.

Having won his way with the farmers, Thacker thought of another plan whereby he could establish close contact with the business men. He went to John Onstott, the biggest merchant, and asked permission to work in the general store Saturdays. Work in a country store of this sort, which handles everything from groceries to tractors, and takes wheat by the thousands of bushels and cotton by the bale in exchange for some of its larger bills, is far different from clerking in a city store. It takes a world of experience and the knack of a diplomat in dealing with people. John Thacker quickly proved that he had both left over from his earlier career.

"For three years now," John Onstott told me, "the preacher has worked here on Saturdays. He knows everybody, and has made many friends. He's a fine man. I'm not a church member, don't belong to any church. I guess I ought to, for its effect on the young boys. But I don't. Just the same, Thacker can count on me for \$500 or more toward his community center church."

But Thacker's work and sacrifice have accomplished more than that; for they have brought about a state of affairs wherein business men and farmers, of all denominations and of no denomination, are combining to build a church according to plans Thacker has prepared. At a meeting early in the year the money was pledged. The banker, the leading farmers, and all the merchants of the town except one attended. Ground will be broken early in the spring. The men of Roosevelt are giving \$7,000 for the project, and the Methodist Centenary Movement gives the balance. District Superintendent Collins saw to that, in making his budget of demands upon the \$11,000,000 of the Centenary Fund which the Methodists have set aside for rural church betterment.

Such a man is John Thacker, country preacher.

This is the Boy Scout hut that Thacker built at Roosevelt, and some of the boys who belong to it



Two Things You Can Do to Get More Money Out of Your Hogs

By Tom Delohery

IT HAS been part of my regular day's work at the Chicago yards for the last nine years to study the hog market. One of my conclusions, as a result of this work, is that there are two things you as a farmer personally can do to get better prices for your porkers. They are:

1. Find out what kind of hog is most profitable for you to produce; then specialize on that kind of hogs and stick to them.
2. Study the market to learn when receipts of that kind of hogs at the yards are usually lightest, and work to get your hogs on the market as near that time as possible.

I will explain these points more in detail as I go along.

I have gone into the situation very thoroughly, and find that while there is no sure-fire marketing system, because supply and demand rule the trade, the things I mentioned above are factors which you, in a measure, control, and which, if applied rightly, can be used to good advantage.

In this connection it is interesting to note what O. A. Swank, a farmer near Crawfordsville, Indiana, told me.

Swank solved his market troubles by doing these things, but only after he had realized his method of making hogs for market purposes was not getting him as much as he should get. And I might say that he made hogs as do the majority of farmers.

Being a renter, naturally he did not have all the equipment which was necessary, and did not want to build hog houses with his own money. He was raised on a farm, but took up school-teaching, only to return to farming when he found the wages were not enough to give him a living.

"THE awakening came after I had been raising hogs two years," he said. "Like all of the farmers in my neighborhood, I had my pigs come late, because I did not have a hog house. I made good hogs, feeding them well, but I got them to the Indianapolis market along in January, when everyone else was marketing swine."

"I didn't pay much attention to this condition the first year, because I had other things to think of. But the second year, when I got to market, the trade had enough hogs that day to fill the demand for two or three days. My hogs sold early, at a price which was about 25 cents lower than the previous day."

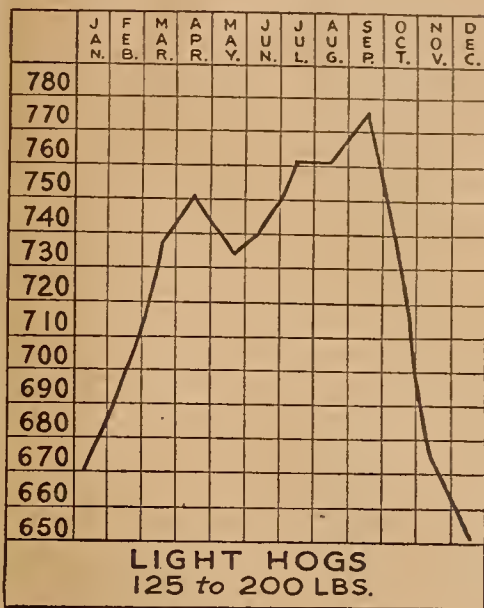
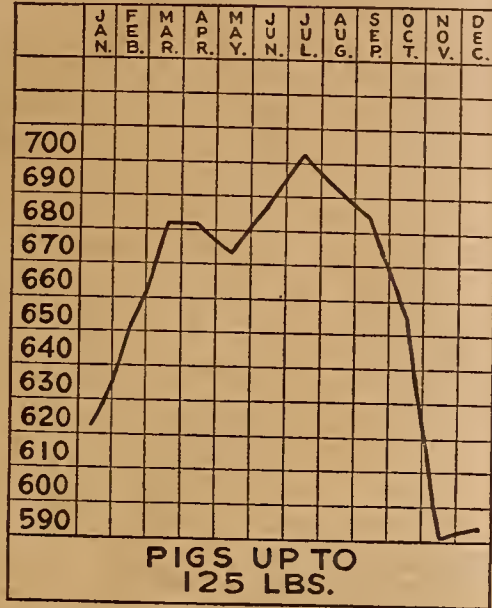
"Being a tenant, this reduction meant a whole lot, for I needed every penny I could get. I knew the hogs were of good quality, and were finished nicely, and I expected more for them. However, when it was explained to me that the price was good, everything taken into consideration, I began to wonder why the hogs were bought so quickly. It took only a few minutes to sell them, and I noticed that the commission men and buyer could not get together in five minutes on loads in adjoining pens."

"Accordingly I went to the buyer, and put the question to him. His reply was that my hogs were of the type known as butcher hogs, and this type finds a good demand the year around. Moreover, the hogs had quality. I asked him why the butcher hogs were wanted, and he said it was because they were of the right weight, carried only a medium amount of fat, and the carcass cut up into pieces for which there is good demand."

"We talked for quite a while, and he told me the people were getting away from meat having large quantities of fat."

"When I returned home I sat down and thought the whole thing over. Up to this time I had been successful as a farmer, making more money than I would have made had I remained at teaching. And I had determined to stay with the business, and some time in the next few years to own a place of my own. I had gone into hogs on a large scale, and said to myself that if I was going to stay in the game I had better map out a plan for myself, so that I could get every dime possible for my hogs."

"Of one thing I was certain: I was making the right kind of hogs, and the thing which remained to do was to get them on the market when the supply of my type of hog was not so great. From reading the papers I knew that early in the fall and the



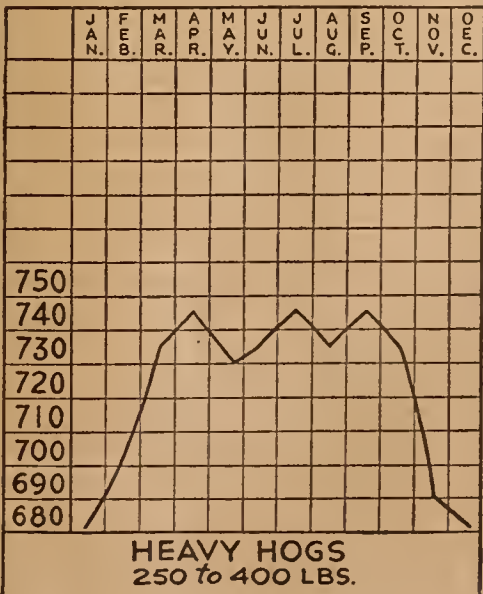
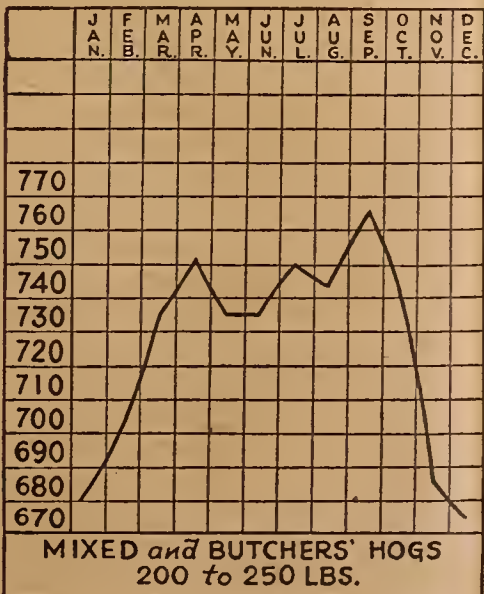
This is O. A. Swank, the hog farmer of Crawfordsville, Indiana, who gets better prices for his hogs because he studies the market, knows what kind of hog to make, and when the demand for it will be the greatest

I can explain it further by the use of the charts which accompany this article. These show the time of the year when heavy, mixed and butcher, and light hogs and pigs sell the highest and lowest. And since supply and demand rule the trade, they also tell the time when the various kinds of hogs are coming to market in good volume.

The figures on the charts represent the average price by months for ten years—1906 to 1915. The prices do not mean anything, being the average for this time; but they show the high and low points of the year. What I did was to take the prices for each month for ten years, and strike an average for the month over ten years. I got these figures from the stockyard company at Chicago, and similar figures for every market can be obtained from the various companies; the Bureau of Markets, or the market newspapers, if you want them.

In connection with the chart showing the trend of the pig market, I would like to call attention to what use this knowledge can be put to. It not only tells when it is best to sell pigs, but also when is the best time to buy at the lowest figure. This last use will come in handy for men who make it a practice to buy feeder pigs every year. This business is increasing in the corn belt, the farmers in the North buying thousands of thin pigs each year from the South, West, and in localities where they do not have grain with which to feed them.

The charts show that pigs sell best in



July, and from then to the end of the year they are on the decline. The low month is November. They start upward in December, increasing by leaps and bounds until March and April. It breaks in May, but after its recovery in June the price goes up until the high point is reached in July.

Heavy hogs, weighing upward of 400 pounds, fluctuate more widely than the other types. The high time for heavy hogs is reached in April, July, and September, with prices hanging around the top from March until October. About the first of October the packing or winter season starts, and the receipts are very heavy. Packers figure on getting the bulk of the winter hogs in December and January. After September the market gets plenty of packing hogs, old sows coming first, followed by spring pigs which have been fed heavily. After January, receipts on all hogs begin to fall. As the spring comes on, heavy hogs get scarce, so that by April prices are at the peak.

After April there is a break in the price, the marketing of hogs being rather heavy, because feeders are emptying their feed lots. The hogs coming then are usually spring pigs, and fall pigs which have been running behind cattle; and since the cattle start coming about this time the hogs are sold too.

When this rush is over, the runs tighten up, and the receipts are of lighter weight, which favors the heavy hog. In July the peak is again reached, but during August old grassy sows are sent marketward, causing prices to decline. The peak is again reached in September.

Mixed and butcher hogs are the lowest in November, December, and January, suffering as other hogs do in these months because of the heavy runs. They follow pretty much the course of heavy hogs, except that the extreme top is not reached until September. From April on they are within easy reaching distance of the peak.

Light hogs, too, follow the same cycle, being lowest at the end of the year, and starting upward after January, as receipts get lighter. The heavy runs in the spring hit the light hogs too. I forgot to mention that many farmers send all of their stock to market at this time of the year, especially the renters who are preparing to move.

SINCE supply and demand rule the market, these charts also show when receipts are the lightest and heaviest, high prices follow small receipts, and vice versa.

The remaining factor of having a plan to make a certain type of hog is best answered by what the Indiana farmer told of what he found. The charts, if studied, will also tell what sort of hog it is best to make for the various seasons of the year.

Another question which hinges on the market, and which the farmer has to answer every year, is: How many sows will I breed? This of course depends upon several things, such as amount of feed he has, housing conditions, and the supply of hogs. The last factor, I believe, is the biggest because it determines in a measure as to whether he will make money or not. It is this phase which I will discuss, for this question can be answered by receipts and prices of other years.

The following table, over a ten-year period at the Chicago market, shows how closely prices follow supplies, and how the performance of the market one year—that is, prices and supplies—is a pretty good sign of what is in store for the next year:

Year	Receipts of Hogs	Price of Hogs
1906	7,275,063	\$6.10
1907	7,201,061	6.25
1908	8,131,465	5.70
1909	6,619,018	7.35
1910	5,586,858	8.90
1911	7,103,360	6.70
1912	7,180,067	7.55
1913	7,570,938	8.35
1914	6,618,166	8.30
1915	7,652,071	7.10

That watching the market pays has been my experience in talking with some of the smartest feeders who patronize the Chicago market. A little chat with an Illinois man last winter is typical of the way some men study conditions [CONTINUED ON PAGE 38]

Farmers Who Made History



A FARMER saved Rome when Cincinnatus left his plow in the fields, and in a single day raised an army and defeated the barbarians. And Vespasian, whose picture you see here, and who came of good Sabine farming stock, showed himself such a good soldier that Nero didn't dare throw him to the lions even when he snored in the middle of the foolish and despotic Nero's famous singing. Later, the people made this farmer Vespasian their emperor, and he goes down in history as the one ruler of that period who labored for an honest, frugal, and yet liberal government.

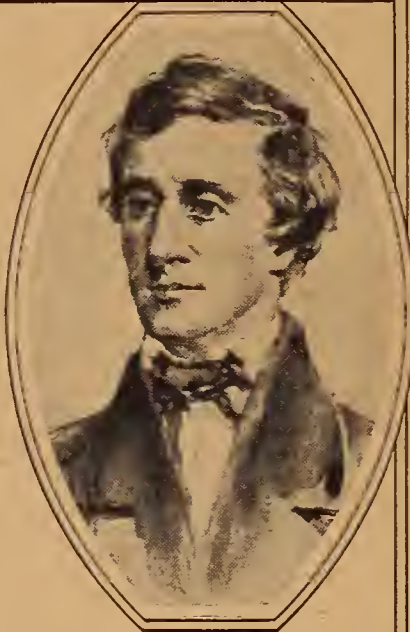


WHEN P. D. Armour died in 1901, the value of his firm's output was over a hundred million a year. Yet, until he was twenty, Armour worked on his father's farm in Madison County, New York, and there was no reason to think that he was ever going to be more than one of the substantial farmholders of that district. Then the wanderlust got him. He went West, saw the fertile country, knew that it would be the great farming land of the world, and decided to make it his life-work to supply the farmers what they would need, and afterward to buy up their stock for the market. He was the original Mr. Armour of Armour and Company.

Photo by Paul Thompson

HENRY DAVID THOREAU became world-famous for the philosophy of life that he thought out among the crops on his farm and put into books.

All he did was to buy a farm for \$28, borrow an ax to build a house with, and start a garden of beans, potatoes, peas, and sweet corn. He returned the ax sharper than it was when he got it. He hired out as a surveyor and carpenter for six weeks in the summer, but the rest of the time he farmed at home and wrote books about it. The books are still read, and at the time they were written they brought pilgrims from the ends of the earth, just to see him shake off the potato bugs.



THERE probably would be no Red Cross to-day if a New England farm girl, Clara Barton, had not organized it as a result of her work in the Civil War. She was called then "The Angel of the Battlefield," and is the first woman in America to have cared for the wounded soldiers on the battlefield. Miss Barton was born and raised on a New England farm where she was allowed no dolls, could sew only for the poor, and must go to church every Sunday, though once she was carried home with frozen feet. It was on the French River near her home that she learned to cross the stream on floating logs as she did in the Battle of Fredericksburg, with her skirt shot away.

EVERY American owes a debt to one old farmer of the American Revolution, Major-General Israel Putnam. Israel was in the middle of a furrow when the neighbors dropped in to say: "The British are coming—ho-ho, ho-ho," and the general left his plow in the fields to take command of the troops. Farming in those days was no joke. In one night wolves killed seventy of the general's sheep and goats, and the old man himself was once lowered by a rope down a hole to shoot a she-wolf who had digested half the herds of the countryside.

Photo by Paul Thompson

MANY people think Robert Burns the greatest poet who ever lived. And once Burns said: "At the plow, scythe, or reaphook I feared no competitor." He seems to have been prouder of his farming than of that famous song of his: "A man's a man for a' that." Bobby Burns and his brother ran a farm of 118 acres in Scotland, and each of them made a good \$35 a year profit out of it, and lived in a clay cottage even after people in London stone fronts began to read his poems and want his autograph. He was tall, and got a stoop from his work with a scythe, which didn't prevent half the women in the Highlands thinking him the best-looking thing they ever saw.



What We Indiana Farmers Have Learned About Soy Beans With Corn

By I. J. Mathews

County Agent, Pulaski, Indiana

THIS article will relate the experiences of Illinois farmers I know who have grown soy beans in their corn for the last two or three years. It is safe to say that the soy bean is the most popular legume which has recently made itself felt in the corn belt. For the last few years many farmers who have found it difficult to grow alfalfa because the ground must be limed where it grows, have found it possible to grow good crops of soy beans on ground that would grow neither clover nor alfalfa readily.

The popularity of soy beans growing with corn in this county may be judged by one very simple statement that can be backed up with facts: In 1917, Pulaski County farmers grew 45 acres of soy beans in combination with corn. In 1918 they grew 1,200 acres to this combination, and in 1919 the total acreage of soy beans growing in corn and alone was 8,464. I pin my faith to the judgment of actual farmers, and I believe the growing popularity of this crop in this county, and the whole corn belt, puts the lie to all those farmers and would-be scientists who say, "There is nothing in this soy-bean-corn proposition."

Mr. O. J. Obricht planted beans two years ago, and the first year he simply put them in the corn for filling the silo. Last year he planted practically all his corn ground into corn and soy beans. In this connection he said:

"I have been told and have read that there is no difference between corn-soy-bean silage and corn alone, but my experience says that there is. I do not know whether it is because the corn silage is less nutritious, or because the flavor made by having the corn and beans together in the silo causes the animals to eat it with greater relish. But I do know that after we got down through the corn silage and commenced to feed the combination silage the flow of milk increased.

"We gave the same quantity of it as we gave of the straight corn silage, too. The cattle may, however, have had quite a bit more roughage, because I always put before them as much roughage as they will clean up. So you see I could not be sure that the combination silage has any more food in it, but I believe it at least whetted the appetite of the cows so that they ate more total feed.

"**I**HAD one field with a considerable area in it—say, four acres—which was not well drained, and, as is the experience of everybody in this country, these low undrained spots are sour. Moreover, this soil is filled with wireworms that take the corn nearly every year.

"Last year the corn on these low four acres was completely ruined by wireworms. They did their damage so late in the season that I did not have a chance to plant any more corn, inasmuch as I was trying to do the work on the whole farm myself and I did not have time to go back over the field a second time to plant something else.

"Had it not been for the fact that I planted soy beans in my corn, I would have had no crop at all here—just four wasted acres. However, on these four acres the wireworms did not bother the soy beans, and so I had a partial crop at least. Had I threshed them, I believe I would have got at least seven or eight bushels per acre, and had I known what price they would be I surely would have done it. But I fed them to my sheep, and the sheep certainly got the money's worth, anyhow. Whenever I plant corn again I am going to plant soy beans in it, if possible, because if I don't get any seed I can get some feed; and even if I don't get any feed, the ground gets the benefit of the nitrogen gathered by the nodules on the roots."

Inasmuch as this article is written somewhere near planting time, and as many are planting for the first time and wish to get the very best results from the soy beans they plant, we will call up Chris Hansen and get his experience in planting them, because he has had a lot of it, not all of which was entirely satisfactory.

Fifteen years ago Chris Hansen landed

in this country, and could not speak a word of English. But since that time he has grown to know American institutions better than nine out of ten native Americans. I make this statement because it shows the capacity of the man to study in order to determine the limiting factors of any crop he is trying to produce, the silo he tries to build, or whatever he puts his efforts into. Chris said to me recently:

"Don't believe this stuff about planting soy beans shallow in sand. I have planted them on clay and black ground, and found it good advice to plant them shallow; but when they are to be planted on sandy fields my advice is to put them down one inch or more. Last year I went out with my man and got him started to planting soy beans on a sandy field. I told him to plant them

of corn. I find that it is better to cut this down to from 5 to 8 pounds. This will give a considerable growth of beans which does not preceptibly injure the corn."

Last spring Chris Hansen had a planter for which the manufacturer had not made an attachment for planting beans in the hill with the corn. Moreover, it was impossible to fertilize at the same time. So Chris just left the fertilizer box on and rigged up an attachment of his own which planted the beans in the hill directly with the corn. This gave him excellent results. Many others, however, with other planters for which the manufacturers had made an attachment, used these with uniformly good results.

Last year John Man wanted to try some soy beans in his corn. After the corn had

the combination in many ways. Three years ago Mr. Bremer's corn and soy beans were weighed up, and then the two crops weighed separately. It was found that out of a total of 12 tons of green matter secured from the acre, 9.2 tons were corn and 2.9 tons were soy beans. The best that the corn alone did in total tonnage was 10.6 tons. In commenting upon this Mr. Bremer said:

"It is still an open question as to whether the soy beans really injure the corn or not. Where the beans are planted too thick—more than two beans to the hill—there is some injury to the corn, and I have found that there can be too many beans in the corn for a good quality of ensilage. If there are too many, it makes a disagreeable-smelling ensilage that the cattle do not care for. Our experience is that a good proportion for palatable silage is three parts of corn and one part of soy beans, the parts by weight.

"**B**UT to get back to the matter which I mentioned in the first place—that of the soy beans injuring corn: Sometimes it has seemed to me that the corn was even better where it had a few beans in it than it was where planted alone. At other times, the corn was injured. I believe the answer the crop gives to this question will depend upon the season, and also on the type of soil.

"In our locality, the amount of rainfall is usually the thing that limits the growth of corn, and if we get enough rain to supply both the corn and bean plants, and if they are put with corn on a rich soil, I do not believe that there is any great amount of injury. What injury is done to the corn is much more than offset by the extra tonnage which we get in having the two grown in combination.

"I have noted a number of different instances which show that there is considerable fertilizing value in the soy beans which comes through the nodules on their roots. Two years ago I had a field a part of which was planted to corn with soy beans, and another part planted to corn alone; otherwise the field was treated exactly the same.

"The next spring this cornfield was disked and put to oats. Where the soy beans had been grown the year before, the oats grown after corn alone did not lodge. This was so marked that you could see to the row exactly where the oats had been planted on corn-soy-bean stubble."

These experiences of various farmers show that the soy bean has established itself as a permanent go-between in the cornfields of the corn belt. There is a great deal of question as to the amount of injury caused by the soy beans being grown in combination with the corn, but I have never yet seen or heard a statement to the effect that it does not pay to grow the soy beans in the corn, because if used for silage a larger tonnage is thereby secured; if wanted for hogging-down purposes, a better balanced ration is supplied, and many farmers will witness that the hogs so fattened are of better finish than when they are fattened out by hogging down corn alone.

Even when the soy beans are planted with corn, and the corn is to be husked out, nine out of every ten farmers who have tried it will contend that the loss in the corn crop is more than offset by the fertility that is added to the soil, and the increased feeding value of the stalk pasture.

A New Picture of You

THE old idea of the farmer—gawky, obstinate, and frequently ignorant; living on corn pone, sowbelly, and molasses, in a sod house or timber shack, scarcely better than the building which houses his cattle and hogs—has gone forever.

The same skill and judgment that enables the Middle Western farmer, for example, to produce the best corn, wheat, cattle, and hogs in the world also enables him to buy with discrimination. He is no "piker" in the action. A man with an investment ranging from \$5,000 to \$100,000, put into a farm, may properly be called a business man.—SENATOR ARTHUR CAPPER.



Photo by W. H. Gilman
Rockford, Illinois

Even the little folks are interested in the "bug houses" (nodules) on the soy-bean roots

shallow, of course, but he planted them shallower than I had directed—in fact, they were just covered.

"We had a long spell of dry weather after these beans were planted, and as a consequence there was not enough moisture in the soil to sprout the beans, and the corn was away ahead of them before the beans got started. Sand ground never bakes, and these beans would not have had any trouble in getting up through the sand had they been planted much deeper, and I am reasonably sure that down there they would have got enough moisture to come up and thus keep pace with the corn.

"When we have planted on clay, however, we find that if a good rain comes after the beans have been planted, and are germinating, a good many of them will never get through the ground. The root, in trying to push the seed through the soil, encounters a great deal of resistance in the clay ground after it has been rained on and puddled."

"**T**HE first year," says Gus Selmer, "I drilled my corn, and then retraced the rows with beans in the corn planter. After I had once gone over the rows, there did not seem to be any danger of getting the beans planted too deep. At first I had considerable trouble through getting the beans too thick. In fact, they were so thick that when they came up there wasn't any room for the corn to grow, and it was a crop of beans and a little corn which made a bad-smelling ensilage. This the cattle did not seem to relish any too well.

"In order to keep the beans from planting out too fast, I took but one of the smaller plates, and plugged up every other hole with lead. This gave me just the right results. When we first started to plant corn with beans in this country, the suggestions read to plant 10 or 12 pounds per acre with the corn, but my experience is that if you plant 10 to 12 pounds per acre with the corn, and the beans come up well, you will get a crop of beans, but only a partial crop

come up he had one of the boys go through, and jab in a hill of beans between each hill of corn with an old hand planter. In speaking of this he said: "That did not do at all. The corn had such a good start that by the time the beans got up the corn shaded the rows, and the beans never did make any growth. A few of them grew up tall and spindling, while but few of them were inoculated. I doubt, though, if the date of planting had anything to do with the inoculation of the beans, although the seed had been treated."

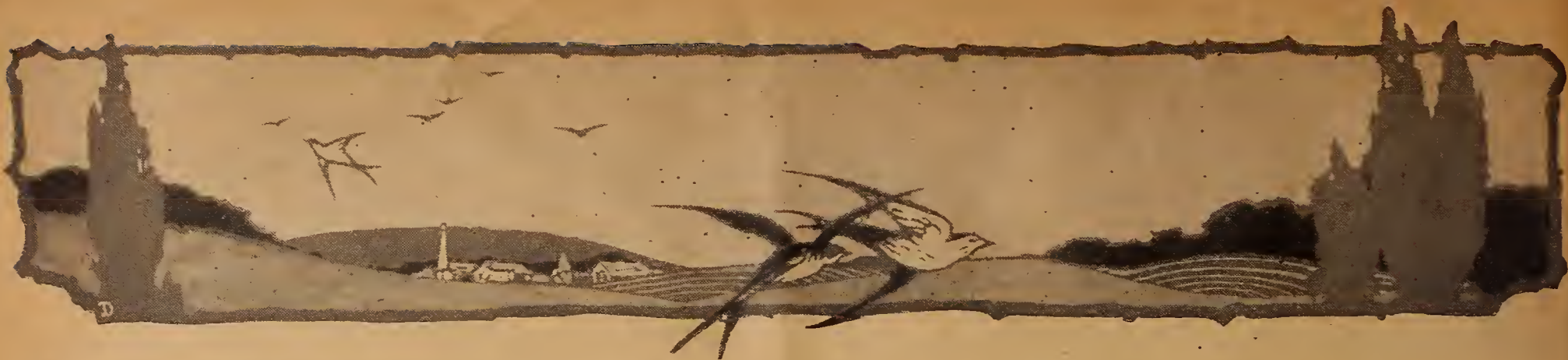
AS TO the method of planting the beans directly with the corn, a plan tried out by A. P. Brucker has given fairly good results. Mr. Brucker commented in this way:

"The first time I planted corn and beans together I mixed the beans and corn; but, on account of the beans being round and the corn being flat, the beans worked to the bottom of the planter boxes much more quickly, and went out first. It was a case of planting beans and corn all right, but a matter of planting most of the beans first and the corn last."

"Later I got away from this difficulty by carrying a paddle with me, and at the end of each bout I got off and stirred the mixture in the planter boxes. This gave me more even planting. I later tried something different that proved even better, and was much less bother. The planter boxes were filled about four-fifths full of corn, and on top of the corn a quart of soy beans was placed. These worked down through the corn gradually, and gave a fairly even planting."

Mr. Brucker says further: "The only trouble with mixing the beans directly with the corn is that the beans are planted too deep unless special effort is made to plant both the beans and the corn rather shallow. On our clay and black ground this is very desirable."

H. F. Bremer is a veteran corn-soy-bean grower, and he has tested out the value of



Why Men 3,000 Years Ago Were the Same as Men To-day

By Joseph E. Wing

THE word "overcome" is in much use in the Bible. We see frequent references such as:

"To him who overcometh I will give power over the nations."

"To him who overcomes I will give to eat of the tree of life."

And again, in John:

"Ye are of God, little children, and have overcome them, because greater is he that is in you than he that is the world."

And in Revelations:

"He that overcometh shall be clothed in white."

I think young people are often impatient of the Bible, they say:

"What, that old book? What has it to do with to-day? Everything has changed since that book was written. The problems are all new now, men are different from what they were two or three thousand years ago. The Bible does not come down to touch modern life at all."

What a mistaken view that is! The Bible is a glorious book just because it was true when it was written. And because of its getting hold of the underlying truths of human existence it is true to-day, and must be true to-morrow and forevermore.

Men three thousand years ago were the same as men of to-day, only they were simpler in manner, more direct in action. Three thousand years ago men hungered, grew weary, suffered from heat and thirst and pain just as they do to-day. Three thousand years ago men had souls that were filled with longings for something better, for existence that would be fuller, richer, purged of unhappiness.

They knew their own weaknesses and longed for strength to overcome them, they believed that some day there would come a time when they could live, at least, the higher, better ideals that came to them from God; and forever in the Bible we get glimpses of the inner lives of men that reveal to us how almost exactly like us they were then, and how like them we are to-day.

IN TRUTH, the world is very old and changes very little from year to year, though doubtless there is a slow, steady evolution going on, but it is slower than mortal eye can well measure.

For example, men before the dawn of history found a wild grass growing—we know not where, though we assume from evidence that it grew in Palestine, the Holy Land. The seeds of this grass were good for food, and so men took them and sowed them, and grew them in little fields walled up with stone walls to protect them from the animals.

After a time new forms of seed came from these—larger and better. These were saved and planted with wonder and joy. Thus, after a long time, came wheat to the world, first a wild grass, then a sowed grass, then a full, plump grain.

God alone knows how many thousands of years the human race worked on the wheat plant before it was changed to what we see it to-day, but this we do know: there has been so little change in it since three thousand years that it is hardly observable.

So of human nature: man had evolved nearly three thousand years ago into very nearly what he is now. He was simpler, more direct, more honest in expressing himself, blunter; he dressed indifferently, and maybe more sensibly; but take it as true that the great primal lessons of human experience, human endeavor, human achievement are portrayed in the Bible as they would be portrayed of life to-day if to-day men had the art of putting much in few words as they had that art then.

In the old days honor was given to the man who overcame. If he could go out to

where the people were assembled and enter the lists of contestants and run a great race, he was given honor. The body then was honored more than it is now. It was recognized that body and soul are closely linked; that a strong, enduring body under good control, a body dominated by a mind that was strong and resolute and capable of suffering till it overcame, helped mightily in the making of a strong man. The weakling had pity, but not honor, in the old days.

THINK what it meant, then, to overcome all adversaries in a race on foot. The courses were long, sometimes many miles in length. The sun of that land was hot. The contestants stripped themselves of every superfluous garment. They had prepared for the race by following rigid rules of right living. Daily they had run, and hardened their muscles and developed endurance. They are off, the race is begun. It is easy at first. There is great joy in running when one is strong and fit. They move off together, all the contestants running easily, strongly, splendidly. Their friends cheer them on. It is glorious even to start in such a race.

You can see them all, the confident, arrogant one who has not taken trouble to make much preparation; he is so well born, he is so finely formed, God has done so much for him, he is sure of overcoming his fellows because he is handsomer than they, he is richer, he is better born. And then there is the one of faint heart: he looks timidly about him, he runs well enough, but he is apprehensive of defeat, of harm from someone. He fancies that he does not have the sympathy of the audience.

Then there are those who have splendid bodies but who have abused them by riotous living. They, too, are apprehensive, and at the very outset they push feverishly to the front, resolved to show

by very force of will that one can overcome, can win the race, despite dissipation and evil living. And there are the few who have clean, healthy bodies, hardened by steady use of those who have tasted the fresh air of early morning and brushed off the dew of the desert grasses as they have gone out daily to use and strengthen their bodies preparatory to this supreme test.

All run easily enough together for a way, then the dissipated men lag behind. They make desperate efforts to recover, they come to the front again and again, but sooner or later they are forced to drop back. They lag behind, they run in the dust and are hidden from sight, they drop by the way.

Then the self-confident man of good birth and fine appearance is in distress. His breath comes hard, he sweats, pants; a look of wonder comes over him. Is it possible, he thinks, that these his neighbors, common people, not sons of a chief, as he is son of a chief, can overcome him? He too drops behind, and at last only the few fit ones are running side by side. And now at last, a long way off, the goal is in sight, and the shouting multitude.

And now a new temptation assails those who have really done well. It is not in human flesh and blood not to become weary. To keep pace at last takes all the resolution, all the endurance, all the power, that anyone can summon.

The thought comes in at last, even as the goal is in sight:

"After all what does it matter, my keeping up this struggle? I have done well. All can see that I have done well. These beside me are welcome to keep on if they choose, I will stop here; there is a tree here by the wayside that makes fine cool shade, there is water here and a place to rest. I have proved that I can run well. I'll just drop out now and let the fools who wish to wear themselves out keep on if they will."

So he drops out, and is astonished to find that he is not received with honor. He is ridiculed instead. The maidens with wreaths do not offer to crown him. True, he had run well, but he had not "overcome." The eyes of all the people are on the ones who are yet running. They do not care for the man who ran well and would not keep on running.

So at last a few, a very few, men are left in the race, and they stumble desperately forward. Every step is agony at last, the heart is toiling mightily and in pain, the breath comes in gasps, life itself seems almost to forsake the overtaxed runners. In despair one by one they drop back. The will, the thing that resides in a man and that we call his soul, that is stronger in some than in others, it urges, it quietly directs one body, it says:

"Keep on. No matter if I thirst, no matter if I am about to drop with weariness, no matter if I am in pain, the goal—the goal is in sight. Go on fainting, body, on, on, I will finish. I will continue my lead."

And at last the winner steps across the line—he has overcome. It is not merely his fellow runners he has overcome, not chiefly them, it is his own self, his weakness, his love of ease, his love of pleasure, his love of comfort, that he has overcome at last and he is victor, and hears the mighty cheers of the people.

The greatest of his countrymen come to offer congratulations and to speak words of praise. Maidens sing, and he is crowned with a wreath of flowers. As John says: "Ye are of God, little children, and have overcome them because greater is he that is in you than he that is in the world."

IT IS by no means the hugest body, the best assemblage of muscles, that overcomes, it is the body driven on by the best guiding intelligence, the best will, the most indomitable resolution. And so it is true that the early Christians did wonders, did real miracles of achievement and heroism, because of the sense of divine leadership that they had, because, as John says, "greater is he that is in you than he that is in the world."

There are two great lessons in this thought—the one lesson of the marvelous power that comes from the sense of leadership, the power to do and overcome that arises from a calm, unquestioning, serene feeling that one is following a leader, following one who is greater and wiser and better than he can be, yet who can be followed, and from this feeling comes strength to endure, to overcome.

There is need of leadership in the world to-day as there was always need of leadership. Think of the lesson of the Christ, the man of humble parentage, the obscure carpenter, the man who gathered around him a few unlearned men—fishermen, laboring people, men of no great reputation—gathered them, and taught them till they thought they understood His thought, made them believe till they thought they were willing to die for their Master.

Think what that leadership resulted in—the conquest of the world of thought and belief, the influencing of all the civilized world to-day; and think what may result from that leadership when the time comes that men are willing to try leading lives such as Jesus taught them to lead—lives filled with unselfish labor, with love for fellow men, with pity for the weak, with scorn only for the oppressors, the unjust, the scorning ones.

Christianity has seldom been tried. Churches call themselves Christian, flatter themselves they are leading people in His footsteps, while really the spirit of the Master is hardly yet penetrating into the consciousness of [CONTINUED ON PAGE 35]

We Are All Running Foot Races of One Kind or Another

JOE WING tells in this article the story of how and why men ran foot races three thousand years ago. Only the most determined finished the course. Only those who, winded, weary, and aching, still would not give up, were honored and rewarded by final victory. It was the will to accomplish things in spite of discouragements and difficulties that made them go on. And those who quit or fell by the wayside were ignored.

Isn't that a pretty true picture of what you and I are doing to-day? Don't we come in some evenings weary and discouraged, and throw ourselves down with the feeling that it is no use to go on?

I think we all have these moments, just as the foot racers had them three thousand years ago. Just as all men have had them since the world began. I know I worry and fret about this magazine sometimes, and grow blue and discouraged because it doesn't seem to be all we try so hard to make it, just as perhaps you sometimes feel the same way about the farm.

We are all very human in this respect. It is the way we are made. We cannot prevent those feelings coming, but we can keep them from taking possession of us. We can fight them off. The only thing to do is to pull ourselves together, think the facts over carefully to see where we may possibly be overlooking a chance to do things a better way, then jump in and go at it again.

It has been our experience that there is a way out of almost any difficulty, if we will just have the courage, the determination, and the patience to think hard, keep on fighting, and never allow ourselves to sit down in black despair and give up.

No man is ever licked on any proposition until he is ready to admit it.

THE EDITOR.

The True Story of Kanred—the Wheat That's Making Kansas Famous

By L. E. Call

Head of the Department of Agronomy, Kansas State Agricultural College, and Corresponding Editor of Farm and Fireside

HAVE you ever seen a farmer who thought he had the best variety of wheat that he could obtain?

I haven't, and I have talked with thousands of farmers about wheat varieties. They will admit that the wheat they are growing has done fairly well, but they would like to have a variety that had a little stiffer straw, or didn't shatter quite so easily, or was a little more winter hardy or produced a plumper kernel.

For this reason many unscrupulous seed dealers are renaming old varieties, advertising them in highly colored, beautifully illustrated seed catalogues, and selling them at several times the price the seed is worth. They sell their seed. Farmers continue to buy, and usually are disappointed.

It is not an easy matter to produce a better variety of any crop. It is especially hard to improve wheat. Wheat has been a domesticated crop for thousands of years. Through all this time it has been gradually improved, and different strains have developed under different climatic conditions.

These strains are usually well adapted to the conditions under which they are grown. Attempts to improve them by the most careful methods of selection and breeding have so often been disappointing that to the present time comparatively little progress has been made. Frequently a strain which gives good results the first few years fails to maintain this record in later years.

While it is comparatively easy to produce strains that are better than the best varieties in certain respects, it is very seldom that one is found which is better in every respect, and which under a variety of conditions produces better yields or better quality of grain.

Some progress has been made in the past ten years. With more liberal financial support for the agricultural experiment stations, and a better understanding of the laws of plant-breeding and of their application to farm crops, it is reasonable to expect much more rapid progress in the future.

THE development of Marquis spring wheat at the Ontario Agricultural College in Canada has been the most important achievement in wheat improvement on the American continent in this century. The variety is earlier, yields more, and is of better quality than the old varieties of spring wheat, like Preston and Bluestem. In the last ten years it has largely replaced these varieties in a large part of the spring-wheat region.

What promises to be an equally important achievement is the development of Kanred wheat at the Kansas Experiment Station. Kanred is a hard winter wheat which yields from three to five bushels an acre more than either Turkey or Kharkov, the varieties most commonly grown in the hard-wheat section of the United States.

Kanred is the product of a single head selected in 1906 from a variety of Russian wheat that had been introduced into the United States several years before by the United States Department of Agriculture.

It was discovered by selecting a large number of heads from a field of this wheat, planting the seed of each in a single row, harvesting each separately, and studying each carefully.

The first year 554 selections were made, and 451 harvested. The second year each selection or strain was again sown in rows by itself, notes taken, yields recorded, and only the most promising strains were continued. This process was repeated for several years.

By 1914 all but three of the best strains had been discarded. These were planted with the highest yielding varieties of hard winter wheat, in fields, in co-operation with farmers in all parts of Kansas. Milling and baking tests and chemical analyses

were made of all these strains planted after 1912. By 1917 it was definitely proved that one strain—called Kanred—was better than all others.

The credit of having made the first 554 selections from which the now famous Kanred strain was obtained belongs to Professor H. F. Roberts, who was at that time in charge of the Department of Botany, Kansas State Agricultural College.

These two heads are typical of Kanred. This variety is the product of a single head selected from a Russian wheat, back in 1906



Do you know

The Kansas wheat crop can be increased 25 million bushels a year by sowing Kanred, a variety originated at the State Agricultural College?

The above shows how the Kansas City Star carried the message of Kanred wheat to its readers

Plump kernels of Kanred wheat. It is distinctly a hard winter wheat, and adaptable largely to that territory



Note how large and how close these shocks of Kanred wheat are in this field. Heavy-stooling, drought-resisting, and early-ripening are qualities of Kanred wheat that make it popular in the hard-wheat belt

To President W. M. Jardine, then agronomist of the Kansas State Agricultural College, belongs the credit of first recognizing the superiority of certain of the strains, including Kanred, which were considered worthy of test in co-operation with farmers in Kansas.

Like most achievements of importance, the development of Kanred wheat is the result of the combined effort of several persons. In this case, members of the departments of Agronomy, Botany, and Milling Industry working in co-operation produced the variety and determined its superiority.

THE superiority of Kanred over other varieties of hard winter wheat has been proved beyond a doubt. It is superior to them in winter hardiness, earliness of maturity, resistance to rust and yield. It has been grown in about 275 experimental tests and in ordinary fields by about 2,000 farmers in Kansas. With very few exceptions, the results have been satisfactory. Listen to what some of the farmers have to say about Kanred wheat. It is Cris Van Deventer of Mankato, Kansas, talking:

"I have been growing Kanred in my variety test for some years. In 1917 it made so much better yield, and the straw was so much stiffer, than the other varieties that I decided to purchase all I could from the college at Manhattan.

"They let me have only 20 bushels. I planted the 20 bushels on 22 acres of a 70-acre field. The rest of the field was planted to common Turkey wheat. The soil of the

growing in Kansas, and many of the surrounding States have a small acreage planted to Kanred.

"In the section of the United States, where most of the hard winter wheat is grown, the early summer often turns hot and dry. A variety of wheat that matures early enough to escape these periods will outyield others that mature later. Many times a difference of two to three days is very important. A late maturing variety is very likely to be severely injured by hot winds and drought, and occasionally by rust, hail, or insects.

"Kanred usually ripens earlier than other varieties of hard wheat. The difference is not great. At the Kansas Experiment Station the average date of ripening has been about two days earlier than Turkey and Kharkov. In some seasons there has been a difference of four days. Farmers that have grown Kanred have observed this characteristic, and have often attributed the better yield secured from the variety to the fact that it matured earlier than their other wheat."

Mr. F. S. Colwell of Glasco, Kansas, in speaking of this fact said:

"Kanred ripened earlier. It stood the dry weather the best of any wheat around here. On our farm it produced fourteen bushels per acre as compared with eight bushels for our own variety."

IT WAS in the winter of 1916-17 that the farmers of Kansas were convinced of the greater winter hardiness of Kanred wheat. That was the winter that half of all the wheat seeded in Kansas was killed. Over four million acres of wheat were plowed up in the spring, and a part of the acreage left was severely injured.

Cloud County was in the center of the most severely injured area. The fall before, Mr. Karl Knaus, the county agent, had distributed a carload of Kanred wheat in small lots among the farmers of this county. The next year the Kanred fields were about the only ones harvested. Mr. S. G. Wymore of Miltonvale, who had secured 60 bushels of Kanred wheat, seeded it on 60 acres of a quarter section of land, finishing the field with Turkey. His Turkey wheat nearly all winter-killed, and was plowed up. The Kanred on the same field produced a good crop.

The ability of a variety to survive severe winters is of vital importance. There is some loss from winter-killing in the winter-wheat-growing region nearly every winter. In some seasons the acreage lost is greater than that which survives, as for example in 1917, when 53 per cent of the winter wheat of Kansas was destroyed, and over 83 per cent of the Nebraska crop. In 1910 the loss from winter-killing in Kansas was nearly 30 per cent, and in 1912 about 20 per cent. The substitution of a hardier variety like Kanred for the varieties now commonly grown should result in less injury.

There are undoubtedly a number of different causes of winter-killing. Very likely a variety of wheat that is resistant to one condition may not be resistant to all others. Perhaps Kanred may not prove more winter hardy than other varieties under some conditions. But in Kansas it has been less subject to winter injury than the other varieties commonly grown.

There was winter-killing in parts of Kansas in 1916. This was thought to be due to an ice sheet that covered the ground in late February and early March, and to alternate freezing and thawing in the spring. Wheat was severely injured in many places. On the farm of Frank Carlson, in Cloud County, Kansas, Kanred survived almost perfectly this season, while at least 50 per cent of Kharkov and Turkey on adjoining land was killed. The yields were 27 bushels per acre for Kanred, 17 bushels for Turkey, and 16 bushels for Kharkov.

In Nebraska and southern Iowa winter-killing is more [CONTINUED ON PAGE 34]

entire field was upland of the same kind, and the seed was planted under exactly the same conditions.

"The Kanred stoolled twice as much as the Turkey, and ripened four days earlier. The weather during June was very unfavorable for wheat, but the Kanred stood the hot winds so much better than the Turkey that at threshing it made 32 bushels per acre, machine measure, while the Turkey made 17 bushels.

"Some of my neighbors who have purchased seed of me claim that Kanred made twice as much pasture as the other wheat."

Mr. W. H. Learned of Stafford says: "I believe Kanred is better than our best wheat by five bushels per acre."

And Mr. F. J. Kirgis of Beloit says: "Kanred ripened a few days earlier than the local wheat, and produced 31 bushels per acre as compared with 19½ bushels for the other."

"The value placed on the variety by Kansas farmers is also well shown by the rapidity with which it is increasing in acreage. It was first distributed in 1914. Four thousand acres were sown the fall of 1917. To-day over a half million acres are

How to Advertise Your Farm—and Why It Will Pay You to Do It

A heart-to-heart talk with Frank Pyle, of Orchard Home Fruit Farm, Osawatomie, Kansas, a plain, everyday farmer who has made a fortune by advertising the things he grows

NOW, here's your situation, as I understand it. You own the "old Haynes place." You have a nice herd of purebred cattle.

Your neighbors buy seed corn of you. Your smoked hams and bacon are the envy of the community. Your wife has the finest flock of poultry and makes the best butter of any woman round about.

You sell your cattle to the local stock buyer. Your surplus corn goes to the elevator. Your wife trades out the chickens, eggs, and butter at the general store. Your neighbors do the same. They get the same prices you do, although the ancestry of their stock and chickens is unknown. Their wives can't hold a candle to yours when it comes to butter-making.

You are getting ahead financially as you have hoped to do, in spite of the fact that you are mixing more brains with your farming than any man in your community.

The roads are good out your way. A lot of autos whiz past every day. These city folks are sure partial to country products, and are used to paying city prices. But, you say, they don't even hesitate at your farm.

The Editor of FARM AND FIRESIDE has asked for my suggestions for making more money from a farm by advertising it right, and I'll give them to you. Most of them have been tried in building up the business of my own farm.

You need to advertise. But how?

Old man Haynes has been dead these many years. When living, he was no great shakes. He'd be entirely forgotten but for the fact that your farm is known as the "old Haynes place."

First off, I'd say, bury the name of the

FRANK PYLE, Owner
Originator of
Frank Pyle's Apple Juice
Orchard Home Food Products



ORCHARD HOME FRUIT FARM,

Osawatomie, Kansas, R. F. D. No. 3.
Mr. Pyle's letterhead

advertised in all the newspapers of the surrounding towns for suggestions. I offered \$5 for the best name. Three hundred and forty-seven names were submitted, and from them I chose "Orchard Home."

After you decide on a name for your farm, put up a signboard with the name painted on it. Hang it where the passerby can see and know that your farm is not just a farm, but is distinguished by a name.

The next thing to do is to flag the passing possible purchaser. Put up a blackboard by the roadside—the bigger the better. List on it the things you have for sale—butter, eggs, chickens, hams, bacon, seed corn, bull calves. Write big, so "he who speeds may read." Quote prices and be reasonable.

Advertising is not a get-rich-quick game.

It's good business to keep things slicked up and as neat as possible about the place. If you don't, the name may help the transients to remember and identify a disagreeable impression.

On this page is a photograph of the blackboard at Orchard Home.

When the picture was taken I had just finished chalking on it the slogan I was using in my newspaper apple advertising.

In this way I connected the paper publicity directly with the farm.

Your place is more fortunately located than mine. You are on a national highway. My main road is just a township affair.

For this reason folks had a hard time finding Orchard Home until I established a route of my own by erecting road markers at every crossroads for many miles around. The arrows on these markers pointed the proper turns toward Orchard Home.

If you should decide to put up any road markers, don't make the mistake, like I did, in the design. I had a big red apple crossed by an arrow painted on the board.

This apple made an irresistible target for rock-throwing boys, and in some locations I've had to replace them as many as four times.

Your banker will be glad to help you establish the name of your farm by having special checks printed for you and he won't make any charge for this service, either.

Of course, these things I've mentioned are not new. You've thought of doing them, but you just haven't. Don't delay any longer. The expense will be very small, and they will demonstrate in a small way what can be accomplished by you in a larger way.

In your attempts to secure a more profitable outlet by advertising you will have one thing in your favor that all these big companies, with all their wealth, cannot buy. That is your personality. They work every kind of a scheme to maintain the impression of personality with their trade. Just look over their advertisements in the magazines and newspapers and you'll see what I mean.

References:

State Bank of Rantoul, Kansas
Citizens' Bank of Lane, Kansas
State Bank of Osawatomie, Kan.

Apple juice makes a particular appeal to men and children. That's why I picked men's names for my circularizing. If I'd been looking for mail-order customers on eggs,

butter, hams, and such, I would have compiled a list of housewives. This shows the value of studying your market.

You can make a start on your list by keeping the names and addresses of the people who stop to inquire about your blackboard offerings. You or your wife might write to them a few days after their stop at your farm. Tell them what you are then prepared to supply them, and suggest that they stop in again when passing, or offer to send them such things as they desire.

Folks are too much rushed with their own affairs to puzzle out the hen tracks most of us call handwriting. So get yourself a typewriter. It won't take you long to learn how to operate it with one or two fingers, anyhow. My son can use four fingers on the keyboard, and the way he can turn out the letters would surprise you.

The next step is to have some letterheads printed. Don't be stingy when you buy writing paper. Get good quality, and have your printer get up a neat heading.

On my letterheads I use a view of the home house and its surroundings. The drawing and cut cost considerable, but I feel like it was money well spent.

This design also serves as the trademark on the labels which I attach to all the farm products. To protect myself from imitators who would trade on my reputation, I have had the design and name registered in the patent office.

Fruit and things made from fruit are the main Orchard Home produce, although I

You will be surprised at the interest folks will take in helping you make your advertising successful. The city man who buys your hams

will brag to his guests about knowing personally the man who raised the hogs and smoked the ham they are eating. I have found it so.

About five years ago I decided to attempt building up a mail-order business on my bottled apple juice. I already had a very good local trade. I obtained a Kansas City telephone directory. (Kansas City is my nearest large city.) From this directory I picked out 2,000 names. The names were selected from the classified pages, and care was used to list only the class of men who probably would be able and willing to pay the proper price for extra quality. To these I sent a series of circular letters.

I tried to make these letters interesting, as well as convincing of my sincerity. They were very effective, and brought me about 500 customers from the 2,000 names. Many of the men, who for some reason or the other did not order, wrote giving me the names and addresses of other men who might be interested. This suggested to me the idea of enclosing a postal card, bearing a request for names, with my circulars. In this way I have secured

the names of at least a thousand live prospects. Here is a sample of one of these letters:

Mr. E. J. Simms,
4365 Olive Street,
St. Louis, Missouri.

DEAR SIR: Joe Bright, the first hired man I ever had at Orchard Home, went off share-cropping for himself about twelve years ago. The other day he came back for a visit and we gassed for quite a spell.

"Don't you want some sweet cider," I says to him, when he was getting ready to go.

He haw-hawed right off, and said: "Frank, quit your joshing me; who ever heard tell of sweet cider this time of the year."

After he had drunk down a bottle full of "Frank Pyle's Apple Juice," Joe allowed the joke was on him, and it was the best one he had ever tasted.

"Frank Pyle's Apple Juice" is the pure, unfermented juice of clean, ripe winter apples. The way I put it up makes it keep a whole year without getting hard.

No sirc, I don't put any chemicals in it either.

You've filled up all winter on meats and other rich, heating foods. There's nothing your system needs so badly as the malic acid of winter apples.

For a spring tonic "Frank Pyle's Apple Juice" beats all the "yarbs" and "simples" any drugstore ever held.

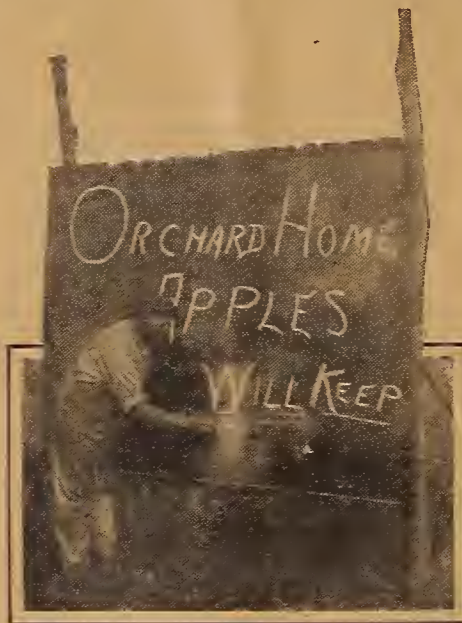
It's more than good for you, "Frank Pyle's Apple Juice" is, it's the most delicious and refreshing drink you ever smacked your lips over.

Don't be scared to try it out. If you're not pleased, just say the word and back comes your money. To-day's the time to order.

With much good will, I am,

Your country friend,

FRANK PYLE.



Here is Frank Pyle writing an ad on his farm bulletin board in front of his place at Osawatomie, Kansas, linking it up with his newspaper advertising campaign

APPLE TALK No. 7.

FORTY MILES TO BUY ONE BOX OF APPLES

"A man down below Westphalia phoned me one morning last spring—

"I want some of those PAYNE'S LATE KEEPER APPLES."

"They are all gone but two boxes I held for myself"—I answered. "All right, set one of them out for me, I'll be right up after it. Make your own price, I've got to have them."

No distance is too far to go for a PAYNE'S LATE KEEPER.

PAYNE'S LATE KEEPER is an ORCHARD HOME specialty. My own personal choice from the hundreds of apple varieties. Nine out of ten ORCHARD HOME customers—after testing them once—prefer PAYNE'S to any—for eating out of hand, baking and preserving.

The PAYNE'S fruit is firm, tender, juicy and exceedingly pleasant in taste. It is subacid, becoming sweet later in the season. Persons subject to acid stomach, tell me they can eat the PAYNE'S with impunity.

And keep—there is no apple its equal. Without special attention, I've kept them until June.

A Plenty of Apples Here Yet.

More people have bought apples at ORCHARD HOME this fall than ever before. They have bought more heavily. Folks appreciate quality at a fair price. They know from experience that ORCHARD HOME APPLES WILL KEEP.

Thousands of bushels of apples are here yet. Rich piles of perfect apples will delight your eyes. Big, red and faultless—in glorious profusion, they are here awaiting your coming to take them away.

Evide the "bols car" snare. Protect yourself from the storage profiteers. Throw a bundle of sacks in your car. Hit the high spots for ORCHARD HOME. Come while the weather is mild. Don't put it off. All these apples will be sold sooner than you imagine.

These Prices Move 'Em Fast

Winter varieties—ORCHARD HOME apples that will keep—largest size, perfect, hand picked, carefully graded, at the farm, per bushel box.....\$2.50

Winter varieties, smaller size—better than most orchards produce—just as perfect and will keep just as long as the largest size, at the farm, per bushel box.....\$2.00

Cooking, Canning and Butter grade—faulty apples that will work up without much waste, at the farm, per bushel box.....\$1.00

Follow the APPLE & ARROW guide boards from Lane, Rantoul or Osawatomie, they mark FRANK PYLE'S APPLE JUICE ROUTE TO ORCHARD HOME FRUIT FARM.

Your country friend,

FRANK PYLE

Note—No extra charge is made for PAYNE'S this year.

Ads like this, published in local papers, brought buyers to the farm for nearly \$18,000 worth of fruit in 1918 and 1919. The advertising cost was less than 2½ per cent of gross sales

"old Haynes place" alongside of the old man himself. Select a name that fits your farm. Don't pick a name which includes your own. Choose one that can be sold along with the farm—one which will be an asset, just like the barns and house.

Some outstanding feature of the landscape may suggest the name, or your neighbors may hit on something that will just suit.

When I wanted a name for my farm I

Speaking of Broody Hens! Maybe You've Tried Too!

Penning up broody hens is just about my supreme idea of wasted effort. The kind of hens I used to keep spent a lot of their time trying to set. It took me lots longer to break them up than it did to gather the eggs they laid. So, I got tired of fooling with them and went hunting for a kind that would spend their time rustling and laying instead of setting. Luck was with me. I hit it right the first day for I selected the S. C. ANCONA.

ORCHARD HOME ANCONAS don't have to be coddled and coddled. They have energy to burn. They hustle around and keep their blood so warm that they can lay during the big price months. They are EGGS-TRAORDINARY WINTER LAYERS.

If you want some of these big, white eggs for hatching, send me \$2.00 for 15; \$6.00 for 50; \$10.00 for 100, all carefully packed and postpaid to you.

Your country friend,

Frank Pyle

Osawatomie, Kansas, R. F. D. No. 3.

A series of ads like this in local papers failed to pay. Only a few people in each locality being interested in purebred poultry, and fewer still would consider changing their breed. A small ad in farm papers of wide circulation would have paid

have a flock of Ancona chickens—good ones, too.

The fruits and berries are nearly all sold at the farm, direct to the consumers. The customers are brought to the farm by advertising in the newspapers of the adjacent towns. In my ads I try to make everything so clear that no one will come expecting cheaper goods or better quality than I am offering. This may reduce the number of folks [CONTINUED ON PAGE 28]

I Believe in Sweet Clover Because I've Seen It Make Poor Soil Rich

By James Speed

This is one of the pictures I took of sweet clover in voluntary growth along the railroad track near Louisville, Kentucky. It was this very clover, formerly abhorred as a weed, that made the worn-out farms of Pendleton County, Kentucky, rich and productive. Note the exposed root system.



SEVERAL years ago I had the pleasure of hearing Joe Wing tell an almost unbelievable story of the redeeming power of sweet clover. As I recall the story, Wing told of a 40-acre tract of land from which a railroad company had stripped the soil for a big fill, leaving only about a foot and a half of naked subsoil to the elements. Wing stated that this piece of lime-sweet subsoil, after lying bare for a year, had been planted in sweet clover at his suggestion, and the land had slowly but very surely been reclaimed.

After hearing the story, I had kept my eyes wide open to find a parallel case so that I might secure photographs which would show vividly and conclusively the great power of this wonderful legume as a soil builder and at the same time prove its love for a lime-sweet soil.

One day I saw a great mass of green sweet clover growing among rough jutting pieces of limestone along the tracks at the edge of the city of Louisville. I recalled that originally an old dirt fort had crowned a small knoll at this point. The fort had been built during the Civil War by the Union troops, as this hill dominated the surrounding fields.

I GOT my camera and went out again for information and pictures. The old fort was gone, and with it about 30 feet of soil. The clay had been used to manufacture brick. Barely a foot and a half of tough subsoil had been left to cover the limestone beneath. Everywhere sweet clover was growing luxuriantly. It snuggled close to the rocks, it had gone above them, it was rooted deep in the thin soil, and it was a mat of vegetation over all of the level ground where the brickmakers had quit work three years before.

I secured the help of a friend with a big strong grubbing hoe, and we went into the clay bank to find out how deep the roots of the sweet clover had gone into this tough soil. We selected a large thrifty plant on the edge of the bank and began to undermine it. When we had unearthed about three feet of the huge roots in the waxy clay, we struck several fragments of limestone with narrow layers of hard clay between them. These tough layers had been penetrated by the roots, which were flattened by the narrow space through which they had to pass. By using our penknives we were able to expose a good portion of the root system for a picture. As we found the fine fibrous roots full of the nodules produced by nitrogen-fixing bacteria, I was disappointed that my camera would not show them.

This experience with sweet clover on barren clay made me anxious to learn more about this wonderful soil builder. I had heard about the farmers of Pendleton County, Kentucky, being saved from bankruptcy by sweet clover, so I made a pilgrimage to that section of the State. On alighting from the train at Falmouth, the county seat of Pendleton County, I found many trucks loaded with milk cans for the Cincinnati market.

I asked the station agent how it hap-

pened that everybody was so wildly enthusiastic about sweet clover. The man stopped tagging cans, looked out over the blue hills about the town, and said, quite emphatically: "It's dead easy to explain. If you had lived here all your life and seen this poor old county when land was worth next to nothing, and lots of times not worth living on, and then seen the change sweet clover made in it just in a few years, I'm mighty certain you'd be just as big a sweet-clover crank as the rest of us."

That winter afternoon I drove out into the country, which still showed on its steep, long hill slopes the scars left by many years of careless farming. Any number of these hillsides were gullied, and gray-white ledges of limestone showed like the skeleton of what had once been a fresh, well-rounded, fertile land. Of course, I knew I was seeing this land at its worst, because sweet clover dies down during the winter, leaving the fields dull and gaunt. However, I was glad to observe the country in its nakedness, for I had made up my mind that I must come to see it again in the early summer when the fields of sweet clover would be things of beauty.

As I had always seen sweet clover growing as a rank weed, I turned to the man driving me, and asked if cattle would really eat sweet-clover hay.

"YES, they'll eat it all right; but as you have never seen them do the trick I'm going to drive you over to the second farm beyond here, so you'll never ask that fool question again."

At the small dairy farm to which he drove me, I found the owner had lately moved from another farm about ten miles away. When he learned that I was anxious to see some of his dairy cows eat sweet-clover hay, he went into the barn and broke the wires about a bale of hay. While he scattered for the cattle he remarked:

"This hay I'm feeding 'em was grown on a farm ten miles away. I baled it, and hauled it. You see my cows eating it like they liked it, even though it is right coarse."

"Sure," he continued, "stock don't take to it the first time they get it. Neither do folks like olives or olive oil right off the bat; but they do get powerful fond of them after

a while, and cattle are the same way."

One bright June day I had the exquisite pleasure of driving with a party of visiting farmers over the white turnpikes which cling to the tops of the knife-like ridges of Pendleton County, and had a real opportunity to see extensive fields of sweet clover. I saw fields in which we could wade almost shoulder deep in the dense green growth. And over these rolling green fields the flickering summer air swept and eddied full of the fragrant breath of the delicate white blossoms, and faintly astir with the contented murmur of bees.

I secured a photograph of one of these typical fields, with some of the party wading in the clover. The photograph shows the heavy growth in the foreground, and the typical, long, steep hill slopes in the background. During this drive I was greatly impressed with the large acreage in alfalfa, sweet clover, other clovers, and blue grass, to hold the soil on the hillsides.

EVERY farmer with whom I talked had something to say concerning the redemption of the county. Sometimes it was from his own personal experience, at other times it was what he had been told time after time, and so I was able to piece out the whole story. It seems that the early settlers found the rather shallow, thoroughly drained, very steep, lime-sweet land wonderfully fertile.

Corn, wheat, and tobacco were the three staples grown by the farmers in those days. As the land produced abundantly, several crops would be produced; then, as the crops grew less abundant, the land would be "turned out," and a piece of new land cleared of timber for the growing of more corn, wheat, and tobacco. As the whole country lay on edge, every rain carried the soil into the streams in the hollows.

Tobacco sold at record-breaking prices immediately after the Civil War. As Pendleton County was noted for the fine Burley it produced, the large landowners had their tenants grow the weed which would bring quick returns for the labor and capital invested. Naturally, under such loose farming methods, the fertile soil was washed from the cultivated fields, and crops became so scant that they would not support the people living on the land.

I learned from a number of thoroughly reliable sources that fully one third of the population of this county left in a comparatively short time, simply because the soil would not feed and clothe them. During this very rapid movement away from the country, many farms, with substantial improvements upon them, were deserted

and extensive tracts of land, which had been fertile and productive, were put up at auction to settle the taxes on them.

About this time sweet clover found an abiding place along a road where limestone dust, scattered by the wind, kept the soil sweet. The fringe of tender, life-giving green moved over into adjoining fields which had been "turned out" as worthless. Year in and year out this wonderful legume grew rank, fell down, reseeded itself, covered the sore spots, stopped the gullies, and filled the soil with humus and nitrogen. Some observant farmers saw these remade fields, and concluded they might grow crops after such a long rest. These old, tired, worn-out, "turned out" fields grew such bumper crops that sweet clover became recognized as the best soil builder which could be used in Pendleton County.

In order to make the reader realize thoroughly what sweet clover and rational farming have meant to this county, I took the trouble to look up some prices of farm lands at the courthouse. I am giving below the figures between 1902 and 1915, as that was when the county really began to come into its own once more:

1903—60 acres, Betty Northcut to F. T. Hughes.....	\$200
1915—60 acres, F. T. Hughes to E. E. Barton.....	1,000
1906—95 acres, J. A. Loomis to J. F. Dougherty.....	\$900
1914—95 acres, Dougherty to J. Lawson.....	2,000
1902—93 acres, C. Dillis to R. Stone....	\$400
1915—93 acres, Stone to L. Monroe....	2,000

OF COURSE, land has increased tremendously since 1915, as it has in all portions of the United States, and especially in the Burley district of Kentucky; but the above figures show conclusively what sweet clover did before the rise in prices set in.

The farmers of Pendleton County have learned a very valuable lesson from the past. They still grow tobacco, corn, wheat, oats, barley, rye, and other grain crops, but on less than one third of their acreage of farm lands. The remaining 70 per cent is in alfalfa, sweet clover, other clovers, and pasture land. Tobacco is no longer the main crop, for milk and cream have now taken first place in the county. The county markets over three quarters of a million dollars' worth of dairy products each year at Cincinnati, Covington, and Newport.

Honey as a money crop has also developed out of the big acreage in sweet clover each year. One season 134,000 pounds of honey left Falmouth, the county seat, by rail, and of this amount 80,000 pounds were produced by three beekeepers. One of these men shipped over 45,000 pounds. As there are a number of shipping points in the county, and innumerable motor truck routes, there is no way of estimating how much honey comes from the sweet clover in a good honey season.

Perhaps the reader has wondered why I have said nothing about liming the land for sweet clover in Pendleton County. The reason is that limestone lies very close to the surface of the soil, and when the washed and gullied fields are sown the plants find the soil lime-sweet. In other portions of Kentucky, even in the celebrated blue-grass section, which is underlaid with limestone, the soil has to be limed to get the best results with sweet clover. At the experiment station of the College of Agriculture at Lexington, Kentucky, a limed plot produced 5,300 pounds of field-cured sweet-clover hay per acre, while an unlimed plot gave a yield of only 2,100 pounds. In other words, the man who decides to grow sweet clover must be certain to have his field lime-sweet before he does anything else.

In this latitude the seed is usually sown on the open frozen ground in February or March, as is also the custom with red clover. Seed may be sown as late as April and May on prepared ground, but those who sow so late as April and May insist that a firm seed bed is necessary to success. A few growers seed in August, as is done with alfalfa. Sweet clover thrives best in a soil which is inoculated with nitrogen-fixing bacteria. The same bacteria is common to both alfalfa and sweet clover.

You Can't Tell Whether a Thing Will Work by Trying It Once

IN WRITING about sweet clover I am reminded of many farmers who try the growing of sweet clover or alfalfa one season and then decide that the crop will not grow upon their land. They fail to get a stand, the young plants freeze out, they bake in the summer sun, or they "just naturally don't grow off right."

These same farmers should remember that they did not learn to grow fine tobacco, develop fine hogs, or feed cattle properly in one season. These men have become successful with many everyday crops and the common farm animals through growing them over a series of years. Exactly the same thing is true of the growing of sweet clover and alfalfa.

Sweet clover will grow where nothing but a weed could get a living, but certain conditions of lime-sweetness and inoculation must be present in the soil. The farmer who, after reading this little story of a remade county, is anxious to try some sweet clover as a soil builder should begin to plan for sweet clover on his farm. He should secure some bulletins from state experiment stations and from Uncle Sam on the topic, and then be ready to take the time to learn the game thoroughly.

From what I have seen sweet clover do in covering the old fort outside of Louisville, and in the remaking of a whole county, I have a fixed conviction that it is destined to become the most popular of all the legumes for the upbuilding of thin and worn soils.

Alfalfa and the other clovers are wonderful cover crops where a soil is fertile and lime-sweet. None of them, however, will grow on very poor, thin soil, no matter how sweet it may be in limes; but sweet clover will. It will grow luxuriantly in gullies, worn-out soil, or in subsoil which is wholly wanting in humus. It grew on such soils in Pendleton County until they were rich enough for its own cousin, alfalfa, to take its place as a pasture and forage crop.

JAMES SPEED.

It is Questions Like These That We'd Be Glad to Answer for You

Better Farming in the South



J. F. Duggar

IF YOU live in the South or are interested in Southern agriculture, your crops and soils questions will be answered by J. F. Duggar. He is director of the Alabama Experiment Station, professor of agronomy, and director of Agricultural Extension Service for Alabama. No one knows the Black Belt or the problems of the South better than Mr. Duggar.

QUESTION: A. H. H. asks about climate and conditions in the Black Belt of Alabama and Mississippi.

REPLY BY MR. DUGGAR: Answering your first inquiry I would say that in Alabama and Mississippi the hottest day of almost every summer lacks several degrees of being as hot as the hottest day of the summer in the corn belt or the Central West—that is, we have a greater number of warm days in a year, but lower maximum summer temperature and more breeze. There is nothing in the climate to interfere with the activities of a man accustomed to out-of-doors work.

Cash rent is not uncommon, especially where the number of acres rented is considerable, or where the renter desires to engage in some other line of production than cotton culture. The renting season usually begins January 1st.

One does not necessarily need more land in the South, on which to make a living, than in Michigan. Indeed, the acre return from cotton as handled by the best farmers is much higher than that from any field crop grown in your latitude. This is likewise true of any small area one may devote to sugar cane for the making of sirup, and may be true of a number of other farm products suitable to this latitude.

I have requested the Commissioner of Agriculture, Montgomery, Alabama, to send you his free pamphlet describing the agricultural conditions of the various counties, and doubtless you can get similar information from commissioners of agriculture in each Southern state capital.

We Help You with Poultry Too



Victor G. Aubry

POULTRY raisers, either professional or on the farm, will find Victor G. Aubry bubbling over with sage advice on how to make this important phase of farming really profitable. He has had a wide range of experience, both in the United States and in Switzerland, and recently left the New Jersey Agricultural Experiment Station to go back to commercial work. He is a graduate of Connecticut Agricultural College, and in 1914 had charge of the poultry department of the University of Maine.

QUESTION: Mrs. O. B. says her chickens are dying off, and wants to know the cause and cure.

REPLY BY MR. AUBRY: In answer to your inquiry, will say the trouble which you are having with your hens is no doubt ptomaine poisoning or indigestion. This is likely to be caused by the table scraps that you are giving your birds. Although table scraps are good feed, and economical, you should be very careful what you are feeding. Strong soap solutions, washing powders, or anything of that kind are very harmful. This trouble might also be caused by a bad lot of feed. There may be some carrion or decayed meat—a dead rat, cat, or

chicken—somewhere in the house or run, that these birds are picking at. First, I would advise that you be very careful with the table scraps. Second, that you make a thorough search of the house as well as the runs, to make sure there is no carrion available to the birds. Third, it might be a good idea to provide drinking water for the birds, and induce them to keep away from this brook.

I would advise that you immediately give these birds a good dose of Epsom salts, about 1 3/4 pounds to each 100 birds. Give

milk but no sugar. Later on try giving bread toasted dry in the oven, so that it is dry and hard all the way through. This may be given just before or just after any of the breast feedings.

The baby's schedule will then be: 6 A. M.—Breast, toasted bread. 10 A. M.—Cereal, served with milk. Drink of milk from cup. 2 P. M.—Toasted bread, salty or plain, unsweetened crackers. Breast. 6 P. M.—Breast, toasted bread. 10 P. M.—Breast.

If the baby is still hungry, a second feed-

fine powder which is applied by broadcasting, one to three tons to the acre being used.

Where you cannot get manure for vegetable-growing, green crops for turning under should be used to a very large extent; these, supplemented by chemical fertilizers, will take the place of manure, but fertilizer alone seldom gives satisfactory results, especially after the first few years, because it is necessary to keep humus or decayed vegetable matter as well as plant food in the soil.



F. F. Rockwell

Getting Your Money's Worth?

WHEN some practical farming problem comes up that you do not know the solution of offhand, our Service Department can in most cases help you. To give you this service we have built up a staff of corresponding editors. All of these men and women are experts in their particular lines. They are always ready to help with farming or household problems if you want them to.

We ask only that you state your questions clearly and briefly, so that whoever answers your letter will have a clear picture of the conditions affecting your problem. If you are draining a field or remodeling a house, a sketch or diagram will help. If you want veterinary advice, be sure to give the age, sex, weight, breed, and other details of the sick animal. The more specific your question the better will be your answer. It will facilitate matters if you will put questions about different subjects, such as dairying and poultry, on separate sheets of paper. Send your questions with self-addressed envelope to Service Department, FARM AND FIRESIDE, 381 Fourth Avenue, New York City. And remember that if there is anything we like more than letters it's more letters.

THE EDITOR.

this in the drinking water. Do not allow them to run out and get to the brook that day, and make them drink this salt water until about an hour before they go to roost, at which time give them a good supply of fresh water. Repeat this dose at the end of a week or ten days. If you can possibly get it, the birds should have sour skim milk or, better yet, buttermilk. If you cannot get that in the raw state on your own place or from your neighbors, look up some of the by-products, such as semisolid buttermilk. This, in a great many respects, is even better than raw buttermilk. If you do not have enough chickens to warrant the use of a barrel of this, you will find it to be a mighty good feed for hogs also, if you have any of them.

Better Farm Babies

AND if there's a baby in your home, or if you're expecting one, don't forget that our Better Babies' Bureau stands ready to help you on any question concerning the little one that is troubling you. If you would like to join the Bureau and receive Mrs. Benton's wonderful monthly letters of advice as to how to care for yourself before your baby comes, and how to take the best care of the little mite when he does put in an appearance, address Better Babies Bureau, care FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

QUESTION: Will you help me with my eight-months-old baby? He is breast-fed, and my milk is plentiful, yet he cries a great deal and is very restless at night, waking three and four times to nurse, and he has not gained anything for three weeks.

REPLY: Your baby is hungry, which accounts for his crying and restlessness. Your milk may be all right in quantity, but it is lacking in quality—his failure to gain in weight would indicate this. It is therefore time to give him feed other than the breast.

Begin by giving him a drink of undiluted, unsweetened cow's milk from the cup before one of the feedings—at 10 A. M., if that is convenient. Only a few teaspoonfuls will be taken at first, and it will be necessary to finish the feeding with the breast; but as the appetite for it increases, the quantity of milk may be increased up to eight ounces.

In a few days try a taste of well-cooked cereal at this feeding, using barley jelly, farina, or cream of wheat, cooked at least an hour. Salt it to taste, and serve with

ing of milk and cereal should be given, and later on even a third if he still seems dissatisfied.

Do You Want a Better Garden?

F. F. ROCKWELL is a natural-born gardener. Any man who will ride a train four hours a day, as he does, to get from his farm to the city and back has got it in his blood. He has had a varied experience as a farmer, market gardener, greenhouse man, seedsman, and fruit grower. He knows the horticultural game from A to Z, and, furthermore, knows how to tell about it. His name has been frequently seen in leading horticultural journals for many years. He will give you the benefit of his knowledge and experience on all phases of gardening and fruit-raising.

QUESTION: I set out some plum and cherry trees, raspberry and currants, on my place, and every year they are full of blossoms and small fruit, but drop off before they are near ripe. I think it is on account of not spraying. Will you please advise me how to take proper care of them? My soil is black sandy loam, but my crops are not good. I see a great deal in FARM AND FIRESIDE about acid or sour soil. Do you think lime would be of any benefit? If so, would common lime that the plasterers use be right? What is the best fertilizer to use for truck farming? I cannot get manure.

REPLY BY MR. ROCKWELL: In all likelihood the trouble with your fruit trees is lack of fertilizer as well as of spraying. As soon as the ground can be worked this spring, I would dig several pounds of the mixture of bone meal and tankage or acid phosphate, in the proportion of one part of each of the former to three of the latter, about each tree, or use a good complete ready-mixed fruit fertilizer. As soon as the leaves start, apply several handfuls of nitrate around each tree, and this will give very immediate results. In putting on the fertilizer, spread it over a circle at least as large as will be covered by the spread of the branches. As to spraying, would suggest your writing to your experiment station and get their bulletin on spraying. This will give you the exact information for your local conditions better than I could.

The cheapest and most convenient form of lime to use in applying to land which may be acid is that called "raw ground limestone." You can get this from most feed or fertilizer dealers. It is a white, very

REPLY BY MRS. NICHOLS: It is difficult to keep the dough for bread at an even temperature in cold weather without the use of a commercial bread raiser, which can be purchased on the market, or a homemade sponge box. The heat in these appliances is provided by a kerosene lamp or an electric light, if electricity is available in the home. Directions for making the sponge box, as well as other helpful household devices, may be obtained if you write to the United States Department of Agriculture at Washington and ask for Farmers' Bulletin 927, Farm Home Conveniences by Madge J. Reese.

I use my fireless cooker to keep the bread dough warm in the cold weather. The plate is heated slightly and placed in the cooker. Then the pan containing the dough is set on the plate. The lid of the cooker is closed to keep the warm air from escaping and the coldness from entering.

In homes where there is not a fireless cooker or a sponge box, the oven of the range may be used with some success. By heating the oven a little bit, placing the dough in it and then closing the door, the cold air of the room cannot reach it quickly. Perhaps an even more familiar way of protecting the bread dough from an uneven temperature is to wrap the jar containing the dough in a heavy blanket.



Mrs. Nellie B. Nichols

Your Livestock and Dairy Problems

YOU don't often find a man who knows both livestock farming and dairying. H. H. Kildee is an acknowledged authority on both, and is in charge of one of the best animal husbandry departments in the United States, which means the world—the one at Iowa State College of Agriculture. Mr. Kildee is a livestock enthusiast and, furthermore, a practical farmer, since he was born and raised on an Iowa farm. You will always see him at the International, and he judges there and at many of the state and sectional fairs. You can be sure [CONTINUED ON PAGE 15]

My Boyhood on a Middle-West Farm in the Days of Long Ago

By W. A. Beale

Part Four

AFTER experiencing the extreme cold of these three winters in Iowa, Father thought it was enough; so in the spring of 1859 we turned southward into Missouri, and settled in Andrew County.

About this time, or some time that year, we came into possession of a little dog, a terrier of some kind. We called him Nigger, or Nig, for short, because he was nearly black. He had very bright and intelligent eyes, which looked at you almost humanly from beneath shaggy brows. He became the constant companion of Brother and myself, and was as fond of the hunt and other outdoor sports as we were. He would play "I spy" equal to any of us, only he couldn't or wouldn't be "it"—hide his head and count one hundred. But we excused him, because he was only a dog. But it was a sly boy who could hide from him.

Whenever he saw us come out with a gun, he would have a fit of joy, and manifest it by capering about and then coming up to us with his mouth partly open and giving a "boo-woo-woo." It wasn't a bark, but appeared much as if he was trying to speak. He would then trot off ahead of us, as much as to say, "Follow me; I'll show you where there is game." If we were going to the woods for squirrels he would soon make his promise good. When a squirrel was hidden on the opposite side of the tree, obedient to a wave of the hand and the command, "Go around, Nig!" he would go around the tree and drive the squirrel to our view, enabling us to get the game. When the shot was fired, and the squirrel had fallen, he would trot away in search of another.

Nig had another line of activity that he might as well have ignored. If there was a skunk on the farm, sooner or later he would find it. I did not know then, as I know now, that a skunk on a farm is an asset rather than a liability, as much of its

living comes from grubs, grasshoppers, mice, and other injurious vermin, and but little from the farmer's poultry. Still it varies its diet with birds and their eggs, which is charged against it.

Nig would never attack one of these malodorous animals until by his barking he had attracted our attention. He seemed to consider our appearance on the scene as sufficient encouragement for him to wage battle, and wage he would. The battle half won, perhaps, he would back out, rubbing one side of his nose, and then the other, cough and sneeze, and, after some moments of fresh-air breathing, return to the battle and finish the job.

But he was not a fit companion for a week after that, and to the women of the house he was very much *persona non grata*.

The fluid which the skunk emits for his defense when attacked is of a most evil-smelling and fiery nature, as is well known.

With the dog, I was going along a woods road one evening about dusk. A big rotten stump stood by the side of the road, and the dog made known to me that there was some creature there, as he began to sniff and bark at a hole by the side of a big root. I thought possibly a rabbit might be in there, and cut a limb with a fork to it, aiming to twist him out. I prodded a moment, when there came a flash like a flashlight and an odor that I knew at once. I suppose there was a crook or twist in the hole under the stump or I might have received the animal's fire in my face. I called the dog and went on, leaving Mr. Skunk alone.

That a skunk's battery would give a flash of light when fired I did not know

before, and I doubt if it is generally known, for I never saw it said in print that it will. It may not be noticeable in daylight, but it certainly is in the dark.

The little dog was a protection to our poultry at night, as no varmint could come around without danger of discovery.

But Nigger met his match one time. He was busily scouting about and around

and through a patch of hazel brush, wig-wagging his tail, bent on discovering something with his nose or his eyes, probably a rabbit which he could not have caught, when he met with a badger, and then there was trouble. Now, a badger is a loose-skinned animal, and for this reason it is hard for a dog to get a grip on him, and

this particular one was about the size of the dog. Mr. Badger would probably have gone about his business, to his den perhaps, if let alone; but it didn't happen that way, for on the spur of the moment, doubtless, Nig bounced him. Our attention was called to his trouble by a few quick barks from the dog, and then a yelp or two as if something had given him a pain. When we arrived on the scene he was bravely standing by, holding the badger at bay but making no attempt to force the fighting.

From the farm on which we lived during our first years in Missouri I attended the best country school. A neighborhood debating society held its Friday-night meeting in the schoolhouse, and I attended and took part in the debates.

Of course, the school had its regular Friday-afternoon spelling contests. I was one of four of the best spellers in the school.

At the schools I attended, ball games,

"bull pens" and one, two, or three "old cat" were the most popular. In the game of bull pen the ring or pen was usually about seventy-five feet in diameter. An equal number of players were put in the pen and on the outer rim. The ball was tossed across from one side of the pen to the other until it had been in the hands of all on the outer rim, when it was said to be "hot," and anyone who might have it then could fire away at any one in the ring or at the bunch, and he that was hit had to recover the ball and throw to hit any of those who had been on the outer rim, who of course had run away as soon as one in the pen had been hit. If there was a miss in either case, the thrower who missed was out of the game. Thus, by elimination, the ins or the outs won. The throws from the outer rim to the pen were usually intended to sting, and so to avoid a hit, some players became very artful dodgers.

In one game, called "Buck," the players were ranged in a row and called off, thus: "Ira, Ora, Ickry, Ann, Filson, Folsom, Nicholas, John Queva, English, Navy, Stickem, Stackem, Roman, Buck!" And then there was a great scatterment, and he that was "Buck" had to catch all the others, assisted by each as he successively caught them.

I set out in this only to write of my boyhood on the farm. This ended when I went into a printing office to learn the printer's trade. After a year or two I went out of that into the Union Army, though not yet past my last 'teenth year, for the country was in the throes of the Civil War.

Farming has changed greatly since I was a boy on the farm. Then a man farmed the best he could with such help as hand and brain could give him. The agricultural press was not then as able as now, and the science of farming was not taught in schools and colleges. Tools and implements such as now were not in existence, and many did not even know what they

[CONTINUED ON PAGE 37]

[CONT'D FROM PAGE 14] that his advice on all subjects pertaining to the breeding, care, and feeding of farm animals will be worth while.

QUESTION: C. H. A. asks about raising hothouse lambs.

REPLY BY MR. KILDEE: Lambs should be taught to eat grain at an early age. This can be done by having a limited but fresh supply of bran, oats, and a little cracked corn in a trough which they can readily reach.

In raising hothouse lambs some feeders follow the practice of adding molasses, or, prior to the sugar shortage, many of them used a limited amount of brown sugar in conjunction with the bran. A mixture made up of 50 pounds cracked corn, 50 pounds ground oats, 50 pounds bran, and 50 pounds oilmeal makes a very satisfactory mixture for your lambs, while the lambs are young, it is well to sift out the oat hulls, thereby making the ration more palatable and more easily digested.



H. H. Kildee

Missouri, provided the ground is well drained and does not overflow. There would probably be more difficulty in securing a stand of alfalfa on the upland in that section of the State, and it probably would not be advisable to try to grow alfalfa on the upland if you have good bottom land on which the crop can be grown.

The fall of the year is the best time to seed alfalfa. If the land is now in wheat, a seed bed for the alfalfa should be prepared as soon as the wheat is harvested this summer. You should make an effort to remove the crop from the field as soon as possible after harvesting, so that the ground could be plowed promptly. After plowing, the ground should be worked into a good seed bed and the alfalfa seeded any time between the middle of August and the middle of September. You should choose a time for seeding after a rain, when the ground is moist and in condition to germinate the seed promptly. Fifteen pounds of good seed will be sufficient to seed an acre. Try to secure seed of common alfalfa that has been grown in Kansas or Oklahoma. Such seed is much better than seed imported from foreign countries.



L. E. Call

by birth, and we have never seen a Scot who tried who wasn't canny with animals. So you can expect expert and helpful advice from Dr. Alexander.

QUESTION: I have a mare nine years old. I drove her about 20 miles one day, and she got to panting, and she does it most every time I take her out of the barn. This has been so for six weeks or more.

REPLY BY DR. ALEXANDER: You overheated the horse you wrote to us about, and we fear she never will work comfortably in hot weather.

She may do better if you have her clipped, and repeat this each spring; then work her, so far as possible, in the cool of the morning and evening, and cover her body with a light, white sheet and shade her head if she has to work in the sun.

Do not feed corn or green grass to such a mare, but allow oats, bran, and good hay. Do not give any hay at noon, if she has to work, and do not work her soon after a meal.

If she fails to sweat, that may be remedied by giving the following medicine:

Mix together four ounces each of fluid extracts of jaborandi and arnica root, eight ounces of potassium acetate, and water to make one quart. Give one ounce three times daily. Also give the skin a very thorough grooming once a day.

When You Get Ready to Build

YOUR farm engineering questions are handled by Frederick W. Ives. He is secretary-treasurer of the National Association of Agricultural Engineers, and head of the farm engineering department at Ohio State University. He loves to tackle problems of drainage, farm machinery, or



Frederic W. Ives

farm-building construction, and you will find him practical. The tractor tests conducted under his guidance in Ohio have been the most conclusive in the country.

QUESTION: G. E. P. asks advice about building a barn of hollow tile.

REPLY BY MR. IVES:

In building the barn of which you speak it would be entirely feasible to run the tile to the square of the barn. I believe that a 10-inch wall would be sufficient for the sides and a 5-inch wall for the ends and upper story. This wall should be reinforced, however, by pilasters spaced at intervals of about 12 feet. This would be necessary on account of the outward pressure, due to hay which might settle against the walls; 6x6 posts spaced 12 feet apart would hardly be strong enough to support the load on the upper floor. This would be all right if the timbers were actually 6 inches square. We find that timber runs considerably under size. The 6x6 timbers might be used if spaced 10 feet apart. If 2x8 joists are used, they should be spaced not more than 16 inches apart.

A good gambrel roof can be made with the lower rafters 16 feet long and the upper rafters 12 feet long. I would not consider your idea of supporting the roof by braces from 6x6 posts as being a very good method. A self-supporting roof could be designed which would not throw any weight on the interior posts, and would require no tie timbers.

I believe that guesswork in building this kind of a barn should be avoided. I believe that good plans are well worth paying for.

I am enclosing literature of an agricultural engineering firm that makes a specialty of this line of work, and can furnish you with plans at a reasonable cost.

Getting the Most Out of Your Crops

NORTHERN crops and soils inquiries are answered by L. E. Call, who is professor of agronomy at Kansas Agricultural College, and director of the Kansas Experiment Station at Manhattan. He was born and went to college in Ohio, and is thoroughly familiar with farming conditions in the North and Middle West. You can rely on what he says because he is a practical farmer as well as a teacher and experimenter.

REPLY BY MR. CALL: You should have no difficulty in growing alfalfa on creek bottom land in the southwestern part of

When the Animals Get Sick

OF COURSE you won't come to us for advice about a dangerously sick animal. But there are often puzzling symptoms that you don't feel justified in consulting your veterinarian about. Dr. A. S. Alexander is one of the leading veterinarians of the country, and professor of veterinary science at the University of Wisconsin. He is also director of the Division of Horse Breeding for the Wisconsin Department of Agriculture. He is a Scotchman

The Secret of Success is Inside Your Own Head—Have You Found It?

By. J. S. Cates

IT HAS been my experience in farming that when I find some system of cropping, feeding, or marketing which doesn't work the very first time, I am too quick to blame the system, instead of stopping to think that the fault might be in my way of using the system.

I believe many of us condemn really good ideas without giving them a fair trial. I try to keep in mind that a thing which fails to work one way may be made to work another way if I will just have the patience to plan it out on a common-sense basis and give it another chance. And I know other farmers who have followed the same course, much to their profit.

For instance, there is a farmer down in western North Carolina who realized that good farming with him depended on regularly getting a stand of red clover. For years he was just halfway successful in getting stands. Five years ago he solved the problem, and his crop yields and profits have been going up ever since.

The trick was simple, and it probably has a very broad application. Instead of sowing clover broadcast on the wheat in the spring and running over with a drag harrow, or sowing a little earlier and trusting to freezes and thaws to cover the seed, he tried this method:

He put the clover seed in the disk grain drill, in the clover seed box, and drilled it in through the spouts on the growing wheat, putting out a hundred pounds of fertilizer at the same time. The disks were set to run shallow, and the wheat was not injured. By this method practically every clover seed is covered, and the fertilizer gave the young plants just the start they needed, pushing growth while there is moisture in the ground, so that by the time dry weather has come the tap roots are anchored down deep, where the soil is moist.

ANOTHER farmer I know grew red clover for years with excellent success, until suddenly his fields got an attack of clover sickness. His neighbors had had the same trouble several years before, and had dropped clover from their rotations, with the result that yields had fallen off sharply.

This man, when he encountered the clover trouble, immediately shifted from corn, wheat, and clover to corn, oats, and soy beans. His soy beans have made more profit than the clover ever did, and are showing just as good soil-maintaining effect, while allowing the rotation to be shortened up one year. Thus this man is getting the same crop returns in two years that he formerly got in three.

I have seen as many successes come from getting a new angle on the use of legumes as from any other type of strategic move. Using legumes to gather atmospheric nitrogen, and at the same time gather humus, is the most universally applicable key to making poor land into rich land, and poor land is always a critical factor in keeping one away from success at farming. As a rule, only poor folks live on poor land.

I feel like I am treading on a somewhat worn pathway when I mention legumes at all, for the American farmer has been harangued on the subject until he should be tired of it. But unless a farmer is using legumes very fully in his cropping system he is neglecting the most important link in the chain of success. Perhaps lack of success with such crops is under most circumstances the reason for their not being more largely used. When such is the case, the only thing to do is—either to try a new legume or a new method of handling.

But not all the opportunities for making strategic moves in farming are along the line of soil-improving rotations. Often it is possible to tack another industry on to the farm, without any further cash cost to speak of, and to operate this industry on otherwise idle time.

Just to-day an Illinois farmer told how he had doubled his income from a 160-acre farm. His farm represents an investment of about \$25,000. It has required less than \$2,000 additional capital to bring about this doubling of profits.

The main product of this farm has been, and is now, hogs. Formerly the farm produced only the number of hogs that the crops would carry. When crops were light

the number of hogs was cut down to correspond to the amount of feed available. Under the new scheme the alfalfa and clover acreage for grazing the hogs has been increased, and, in addition, feed in large quantities is bought and fed. This farm is producing nearly four times the amount of pork it formerly did. It is all handled by approximately the same labor.

Another farmer I know was getting along fairly well with his general farming, but there seemed no brilliant prospect ahead. One year he bought a few hives of bees. They were more in the line of a diversion than a task, yet last year the bee industry added \$1,500 to the profits of the farm—and that is more than the total receipts ever were before.

One of the most prominent Holstein breeders of America twenty-five years ago was a renter on a farm of less than 100 acres in southern New York State, running a dairy. He got interested in pedigreed cattle. He studied the herd books until he was familiar with all the prominent strains of the Holstein breed, and though he had but limited capital to invest he worked out a way to put this knowledge to good account.

Here and there he would pick up at a small price an unpromising-looking heifer, but one with good breeding. Then he would give this heifer the best of care. The next time she came fresh she usually went into the advanced registry, and with a good margin to spare.

This man was Arthur Hartshorn. Several years ago he was elected president of the Holstein Association of America. He is now one of the leading breeders of fine stock in the country. But for this strategic move, he might still be an obscure dairyman on a rented farm.

Another dairyman had pasturage for a large herd, but such limited crop land that there was little field work to do. He needed two hired men to help with the milking, but there was practically nothing for them to do the rest of the day. He finally

seemed to give him new inspiration. He began to take farming in earnest, and to take pride in doing his best. He has succeeded in curing his land of being poor, tightened up the selling end of the business, and is making profits he never dreamed of.

Filling an idle labor gap with a new industry is often highly profitable. I know a man who has a five-acre peach orchard all of the fruit from which he preserves right on the farm. The peaches ripen at a

time when other farm work is practically at a standstill. There is no local market for the green fruit, and the business is hardly large enough to justify shipping. Needless to say, this man has a special market. His peach preserves go to the girl schools of the State. In this way he never nets less than \$10 a bushel for the peaches. Some other farmer could have found this market, but the point is that no other one did.

Another farmer has established a side line to his regular business by making sauerkraut. He is located in the South. He usually raises about five acres of cabbage, which matures in August. This cabbage is sliced by

a power-driven machine, and the power, when I saw the establishment going, was being furnished by a mule and a treadmill—and packed down with salt in thousand-gallon tanks. The kraut is sour and ready to be barreled and go on the market by late September, thus avoiding competition with the Northern and Western crop, which is not marketed so soon. He had figured that out before he planted his cabbage. He knew what he was doing and why he was doing it.

Down in Mobile County, Alabama, lives a man known as "Big Bill" Reeves. Big Bill stands six feet two, and is broad accordingly. He had not time when a youngster to do anything much but work for a living. He was too busy to learn to read or write. He has, however, made a conspicuous success at farming. His is a typical case of winning by a strategic move.

Stop! Look! Listen!

THE man who invented the "Stop! Look! Listen!" sign you see at every railroad crossing was paid \$10,000 for it, because it said so much in such a few words.

Every man could hang it where he could see it every day, and make it read:

"Stop! Look! Listen! And Think!" And it wouldn't cost him any \$10,000, either.

Do You Think as Hard as You Work

ABATTLE is sometimes won by just hammering away along the same old lines, but the thing that wins most battles is a carefully planned strategic move. A strategic move means shifting the attack to some unexpected point, or making it in some new way that the opposition is not prepared to meet.

Farming is a battle the winning of which lies in producing and selling things so as to make interest on what you have invested, to pay and treat your men so they will stick, and to make enough to live well and put a little by—at the same time building up, or at least not depleting, the soil. The man who looks at it this way is pretty apt to win out at farming. It simply requires this: that you shall think as hard as you work—or harder.

It is the planned attack that wins bushels and bank accounts as well as battles.

THE EDITOR.

solved the problem, and turned getting along just fairly well into a handsome profit, by getting a milking machine, and at the same time increasing the herd and letting one man go.

A farmer down in North Carolina tells me that he dates his success from the time he learned to stop patching around over the farm, cultivating a little here and there, and leaving poor galled spots and unsightly thickets to intervene between the ever-narrowing cultivated fields.

When he plowed up the thickets and gullied spots, and put them to cowpeas or soy beans, such land was not only reclaimed and brought back to profitable production, but the fact that his fields then shaped up broad and in long stretches

Big Bill invented in his own untutored mind a quadruple cropping system, upon which he built a livestock industry.

Let me explain about it: He grows by this system four crops on the land at the same time. Some of them grow above ground, and some below. Some of these crops are harvested by steers, and some by hogs. The hogs have to root for theirs. By growing these four crops he produces at least twice as much feed as he would be able to produce by any one crop. The hogs and steers are all turned in at once, and more meat will walk off of an acre of land cropped in Big Bill's way than I have ever seen from land cropped in any other way.

First he plants corn, the rows alternating four feet and six feet. At the same time

the corn is planted, a row of peanuts and velvet beans is planted right down the center of the six-foot-middle. The beans are put in this row at intervals of three feet, and the peanuts every six inches.

For the first cultivation all goes well. After that time the beans have begun to spread toward the corn, and nothing can beat a velvet bean in spreading. As a consequence, cultivation in this broad middle stops with the second going-over. The four-foot middle is cultivated four times, and the last time over is seeded either to cowpeas or soy beans.

All of these crops seem to grow together in the most friendly manner, neither one interfering very much with the others. The beans do wrap up the cornstalks until it hardly looks like a cornfield at all, but seem to have no effect in reducing the yield of corn, and the beans will bear from 1,500 to 3,000 pounds of pods. The peanuts and soy beans attend strictly to their own affairs, and make good growth.

Inventing this system was the strategic move which made Big Bill Reeves a rich man, and which is also remaking a whole section of country. Other farmers, far and near, in the Gulf Coast country are raising pork and beef on crops doubled up in this way, and it looks as though they were going to furnish some stiff competition to the Corn Belt States.

STRATEGY in farming quite as frequently consists in better marketing as it does in better production methods. Marketing is always just as essential as producing. Finding a better market for something that is being regularly produced is sometimes the most outstanding opportunity to increase returns without much increasing outlay. Many has been the case where the parcel post has turned a minor butter and egg business on a farm to a very profitable major one.

But aside from the more or less routine matter of doing better marketing in an industry which is of a standard nature, there remains the less frequently worked field of filling a special demand for something of not so stable a nature—something that will not take too much extra time and labor.

Farmers in a certain section of New York State are producing teasels as a special side-line money crop. Very few farmers in the United States ever saw a teasel grow, except maybe as a weed by the roadside. Yet a number of farms in this section of New York are selling teasels to the tune of more than \$1,000 a year. Teasels are used in putting a fine nappy finish on cloth. The part sold is the bur, which looks like an overgrown cocklebur. The little springy spines are preferred by the fullers to any metal instrument to be had.

A group of farmers near Frederick, Maryland, have established a special market for goldfish. These fish are produced in a series of small ponds, connected one with another, and along with them are raised bass and other fish for the farm table. This industry adds as a rule several hundred dollars a year to the farm income, and takes little or no outlay and expense. The Frederick County farmers control the goldfish industry of the United States.

Now, the point I am trying to make in telling all these little stories is that the average man's progress and prosperity depend upon the use he makes of the mental machinery God gave him, and not on how hard he works his body.

There may be nothing in what any of these men have done that would be of any direct use to you in cropping or marketing on your farm. But many of us can, to good advantage, follow their example of thinking hard about our own particular business. None of these men were any better or any smarter than you are. They simply put their minds to work on their own individual problems. You can do that as well as they can, and perhaps make it pay even better than they did.

A farmers' supply association, organized by the Farm Bureau of Crawford County, Ohio, saved \$4,500 to farmers on a business last year of \$49,500. The association has a capital stock of \$10,000, divided into 1,000 shares of \$10 each.

Farmers Who Started Purebreds Without Capital and Made Them Pay

By Paul R. Lisher

County Agent of Will County, Illinois

WHEN I look back on what the farmers of Will County, Illinois, have done with purebred cattle and hogs in the last two years, I cannot help but think that their success can be repeated by you farmers, or duplicated by any individual.

We were just ordinary farmers, with ordinary means, and about the usual amount of ability as tillers of the soil. I mention this because many farmers have the notion that to get into purebreds requires a great deal of money, and that it is only for the wealthy farmer. This is not true. A purebred animal is a good investment for the poorest farmer, even if he has to go in debt for it. In fact, it is a better investment for a poor man because it will put him on the road that leads away from poverty, because purebred stock makes a more profitable product than grade stuff ever does.

Shortly after I took up my work as farm adviser of Will County, I started to plug for purebred cattle and hogs. I started first on cattle, and sounded out the men I figured would be able to take care of purebreds. I found that many of them had been thinking for a long time that it would be a good thing to own a few purebreds. But maybe, like yourself, they didn't know just how to go about it.

I agreed to help in buying, made several trips to see breeders, and attended a few sales. I liked Shorthorns, and got the men to buy this breed. When the first few animals arrived in the county, there were more men interested, and they, too, wanted to buy a cow or a heifer, and make a small start.

This sort of thing kept up for a year, and when enough men had made a start we got together and organized a county Shorthorn association. Early last year we held a sale to take care of the calves which had been dropped by the cattle.

We didn't have enough surplus stuff in the county to make a good sale list, so I went out and bought some good serviceable stock on my own hook, and entered them in the sale. I bought every animal with a view that it would be purchased by the farmers in our county. Some of the animals, of course, got away, but we retained a lot of the best.

Some of this stuff is entered in the sale we will hold this year, and will make the owners a handsome profit. I have in mind particularly the heifer which Fred Francis of New Lenox bought for \$500. The auctioneer we have engaged, in looking over the cattle we will sell, says this heifer should start for at least \$800.

IN THE two years' time this extension work has been going on, we have bought \$60,000 worth of purebred Shorthorns, including Standard Supreme, one of the leading bulls of the breed. He cost us \$15,000; but is owned by several breeders. At a reasonable fee, he serves females other than those owned by the breeders who bought him.

My suggestion to the farmer who wants purebred stock is to take the matter up with his county agent, or write a letter to the secretary of any of the breed associations. He can tell what he wants to pay and what sort of stock he wants. The officials will be glad to see that he gets the right kind of stuff with which to start.

The lack of money should never stop you from buying purebreds if you see your way clear to caring for and feeding them. Some of our farmers didn't have the money; but they soon got it from the banker, when it was explained what they wanted it for. I told some of them who hesitated on this account that borrowing money to buy good stock was like borrowing money to build a house or barn, or to put in a crop—it is an investment.

Some of the most successful farmers and breeders I know started on a shoestring—that is, bought their start on paper—and now they are well off.

George Schaff of Manhattan, in Will County, is a good example of what a beginner can do. He came to me and said

he would like to buy one or two purebred cattle. He never had had a purebred animal, but he is a good farmer, and has 240 acres of good land, and three boys who will soon be able to take over the reins.

He figured that by starting now he would have a nice herd of cattle by the time the boys were ready to take over the business. Well, I went out to Bob Miller, at Lucas, Iowa, and bought a six-year-old cow and a two-year-old heifer for Schaff. Both of these animals were bred to Superb Omega, a son of Up-permill Omega, one-time grand champion Shorthorn bull of Canada. This was in November, 1917.

Later I bought him a bull for \$500, making the two females and the bull cost him \$1,200. The aged cow dropped a calf in May, 1918, which we sold at our first sale for \$400, and he got a grand little heifer calf from the younger female which ought to bring at least \$800. If she brings \$1,200 at our sale, I will not be at all surprised.

At \$800 he has two animals which will bring him what the original three cost, and he still has the old stuff. In addition to this he has the second crop of calves—two nice heifers which were dropped this year, making five purebreds for the cost of feed and labor alone. Next year, with luck, he should have seven animals, and if he keeps the increase it will only be a few years before he will have a nice herd.

Looking at it from another standpoint, he will have a nice herd for the boys. Through my club work I have found that farm boys have a lot of interest in good livestock, and a herd of purebreds, even though they may not be bred in the purple, will go a long way toward keeping up their interest in the home place. A herd of this type will make the boys wish for better stock, and naturally they will start in earnest to breed up the herd.

The bull calf Schaff sold for \$400 was only ten months old. If he had held him another two months he would have got \$500. The man who bought him at the sale has written to me asking for a catalogue of our next sale.

The experience of Bob Baker, also of Manhattan, is worth relating: At a farm dispersion sale he bought a purebred Shorthorn cow for \$150. She wasn't much to look at, and his neighbors and friends said he was crazy to pay this price for such a common cow; but at

our sale last February he sold the cow with her heifer calf for \$700, the cow bringing \$500.

When one of his neighbors saw the cow and calf in the ring, he said to Bob:

"Baker, you stole that cow."

"A lot of people thought I was crazy when I paid \$150 for her two years ago," was his significant reply.

Here are some more instances that show how purebreds pay:

Marshall Jones, one of our bright young farmers, went up to Chicago and at a sale

bought a cow with a bull calf. The calf went into our sale and brought \$500. As a result of this success his father gave him \$1,000 with which to buy a good cow, and his uncle provided him with enough money to buy a herd of five good cows.

And now Senator R. J. Barr of Joliet has taken Jones under his wing in a partnership. Barr bought a herd of purebreds, and Jones gets half the profits for feeding and caring for the animals. And he also has the option of buying out Barr's interest any time he has the necessary funds.

Will Anderson of Plainfield has purebred hogs, but he never kept up the pedigrees, raising the stuff for market. Last February he sold a load on the Chicago market which averaged 300 pounds, while the best his neighbors could do with grade hogs of the same age was to make their stock average 220 pounds.

Later he fixed up the papers for part of his herd, and sold some of the stock as breeders. Ed McDonald of Joliet wanted to get into purebred hogs, so he bought a gilt of Anderson for \$325. She raised him a litter of seven pigs, for which he received \$775. The pigs were not as good as they could be, because he didn't know how to take care of them; but this was his first experience, and he will know better the next time.

And even at that he has a margin of \$450 over the cost of the gilt to pay the feed bill of \$260, and leave him a profit, and also his first purebred sow. Now he is experienced enough to go in a little deeper, and, if he takes advantage of this, within a few years he should have a fine herd of purebreds.

John Cutler of Lockport thought he would like to buy a purebred female. Accordingly, I picked out a big type Poland - China gilt which cost him \$75. On March 20, 1918, she farrowed her litter, and raised four boars

and three females. He fed out the boars until they averaged 300 pounds, at the age of seven months and thirteen days, and at our hog sale they averaged \$94 each. He didn't sell the gilts, preferring to keep them and start a herd. But, for computing results, we placed a low valuation of \$75 per head upon them. At this figure he would have received \$600 for the litter. A feed bill of \$225 would have left him \$375 as a profit, and he still had the sow.

He would even have been unable to make the male hogs weigh 200 pounds in seven months if they were grades, and his experience proved to be a good demonstration for the rest of the farmers.

And they were very much interested, judging from what has been said to me about the value of purebred hogs for market purposes. I always told the farmers that low-priced purebreds were a decided advantage over grade hogs, for the simple reason that they had the quality and breeding; and it takes several years for a farmer to breed up a grade herd. In the meantime, with purebreds, he could be getting the best prices, and raising hogs with less feed.

APUREBRED hog on the market has the decided advantage of quality. This stands out very plainly, and is a nice thing to have in hogs, especially on days when the market has received enough hogs to go around, and buyers can be a bit choicy.

The early maturing feature alone, in these days of high cost of production and comparatively low market prices, is well worth considering. And a man has more pride in his stock when he has a purebred cow, hog, or sheep in his pasture instead of a lot of mean scrubs or poor grades.

I have always found that breeders are willing to sell their stock to beginners at the lowest possible price. Every breeder who has the interest of the business at heart will do this; but of course there are some who have to be carefully dealt with.

I also make it a point, when buying for farmers, not to keep the strap too tightly about the bank roll. Often I find that the difference of a few dollars in the purchase of the foundation stock means hundreds of dollars in the crop of sales. I always purchase good individuals, with favorable pedigrees; but I lay more stress on the shaping up of the animal. However, the pedigree must not be overlooked.

I always urge a farmer to go slow. Some of the men, when they see how their neighbors have succeeded, become very enthusiastic, and want to buy a whole herd of purple-bred stuff right away; and I have a hard time telling them that it is best to start with one or two animals, and, as they become experienced, to expand. This system, I believe, is the best; for a man who knows little about the game, and goes into it big, is likely to have trouble.

It is better to have all of the breeders in one section breeding the same kind of cattle, because it is easier to sell them.

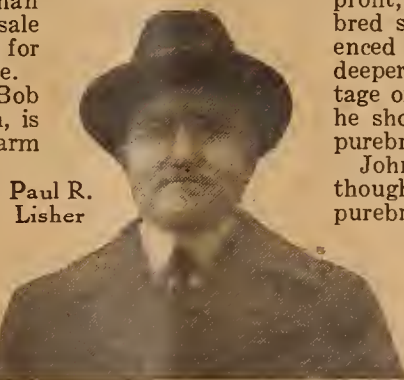
The farmers I know are only small breeders, and by having all of them in one breed we are able to hold sales to good advantage. Otherwise the individuals would have to sell their own surplus. And by having all one breed we will get a reputation for that breed, and this helps when a buyer wants a whole carload of cattle.

One breed association, too, is possible, because all are in the same breed. The men congregate and talk over their experience, and learn from each other. And through this situation we were able to buy Standard Supreme to good advantage. It would have been too much for any one of the breeders to put out \$15,000 for a bull; but when a group chipped in they were able to buy the bull, and make him pay his way, because he could serve all over the county.

This bull will help us a whole lot. The price sounds mighty big; but when you consider the added value of the crop of calves he will sire, the extra price will be big dividends on this money. And we still have the bull.

And here you have the story of why I believe in purebreds.

AT THE head of all science and arts, at the head of all civilization and progress, stands, not militarism, the science that kills, not commerce, the art that accumulates wealth, but agriculture, the mother of all industry and the maintainer of life.—Garfield.



Paul R. Lisher

The County Agent Who Wrote This Story

PAUL R. LISHER, the writer of this article, has quit his job as county agent of Will County, Illinois, to take up farming in Iowa. He has taken over a big farm, and hopes to own it some day. When we asked him to write this article, he told us of his plans. He is buying a few purebreds now, and from these he plans to start a herd which in the end will buy him the farm.

He has always wanted to own a farm; it has been his big idea ever since he left his father's farm in Indiana to go to Purdue. He was a letter man there on the football team. After graduating, he joined the faculty of the Iowa State College, teaching animal husbandry to the farm boys. He was a success in his teaching, having the reputation among his students as being a real livestock man.

Lisher took up his farm work last year, getting a leave of absence from his office. He quit at the annual meeting, but remained with the farm bureau until the second sale of Shorthorns was finished.

In talking with Lisher, we found out that he is following the same line to get into cattle himself that he urged the Will County farmers to adopt. They have been successful, and we haven't a doubt but what Lisher will be too. If you don't believe so, take another look at the determination in his face.

A Journey to a Region Where You Can Still Buy Good Land Cheap

By Andrew S. Wing

I RECENTLY drove through one of the central counties of New York. The road took me up a long winding hill past all kinds of farms. Most of them looked homelike and prosperous. Some showed unmistakable signs of prosperity, with large barns, silos, and houses that had been remodeled and modernized. Black-and-white cattle were everywhere in barn lots and on the sloping pastures.

At one very modern place, a barnyard full of farm machinery, arranged in regular order, gave evidence of a sale. Inquiry brought out the fact that the farm had been sold to a Westerner, and that the former owner was moving to town.

I found a lot of this changing about. In a way it was discouraging, but when you stop to analyze the reason it does not seem wrong. Most of the people who are selling out are doing so because they are too old to carry on the burden of farm work. Farm help is very scarce in this neighborhood. Children have grown up, and in too many cases have grown away from the farm. The incoming tide of farmers is from the Middle West, West, and South. They can buy land in this and other counties of New York very much cheaper than in their home States. Much of it is fertile soil—some as good as corn-belt land. Other parts are hilly and not so good. Most farms are well equipped and have excellent buildings.

One man told me that he had left a rich dairying section in the West because he couldn't afford to buy a farm there. He bought a beautifully laid out farm with a big house and a lot of fine barns for considerably less than \$100 an acre.

"Of course," he said, "this is a different kind of farming, but we think we can adapt ourselves to it and make a success. Out West, land would have cost us four times what this farm cost, and it is potentially no better. Then we have the advantage of better markets here, and proximity to New York and other large cities."

Three bright-looking children drove a rather dilapidated horse and wagon just ahead of us. They turned into a farm which lay on the side of the hill a few hundred yards from the summit. The place looked interesting, so we stopped to rest our tired horse and chat. The lady of the house came out sensibly attired in bloomers. Her husband had just died of tuberculosis, she told us, and she was carrying on the work of the farm. Her white-haired mother came out too, and they told us about the problems they had faced and were facing, while the children stood in an interested but silent circle. They must have hired help, and hands are hard to find for less than \$80 a month and board. The farm was large—200 acres—and the husband had always raised onions and other crops that require special attention. The woman looked brave and plucky enough to tackle almost anything, but she didn't seem so very strong physically. The children will help, but they are too young to do heavy work.

Since that day I have thought a lot about this brave little woman who has taken up her husband's work in such a cheerful, matter-of-fact way, as though that was the only thing she could do. She has come through the ordeal of a long siege of sickness, with the inevitable ending, worn but not disheartened. She is carrying on, and we predict for her success if there is any justice in the world.

Other visits were more cheerful. It was surprising the number of homes that had bathrooms and modern household equipment. And these things had not all come from war-time prosperity. Many of them had been installed before the advent of high prices. They represented prosperity made possible by hard work and thoughtful management.

This is a region of dairy farms. Everywhere are seen the big black-and-white cattle that feed the babies in the Eastern cities. It is not a fruit country. The trees cannot stand the severe winters. Only flint corn is raised, and there is very little wheat. Hay, oats, potatoes, cabbage, and buckwheat are the principal

crops. Seed potatoes from this county are famed in all potato-growing regions for their quality and freedom from disease. Recently, sheep have been coming in, and there have been some notable successes with them.

The corn-belt farmer would chafe at the limitations which weather and soil put on farming in this region, but Westerners who have been willing to adopt rotations that are suited are succeeding. The ability to buy land without too great an outlay

pound. The gross margin of profit per ton for the manufacturer was \$9.89 as against \$.81 a ton for the farmer. At this rate a generous retail price for Michigan refined sugar would be not over \$.13 a pound.

The beet growers are asking for a minimum price of \$12 a ton when the New York wholesale quotation is \$.09 a pound, and for an increase of \$1.40 per ton for every cent increase in the New York price over \$.09. That the manufacturers have been getting the cream of this business is clearly shown by government reports. In 1919 Michigan's sugar crop was 1,001,000 tons of beets, for which



The Letter From Overseas

THOSE of you who remember the November cover picture of Mother cutting Willie's hair will recognize her in this interesting family group, and be interested to know that she is a real, live person. Mrs. William Durrant of Plainfield, New Jersey, has this to say about the picture, concerning which we wrote her:

"The old lady is my mother, Mrs. Ellen F. Cummings—a resident of Plainfield, New Jersey, for the last twenty years, but a native of Maine, where she resided for fifty years. The young lady is her granddaughter, and the man is a cousin, Angelo Colsen, an ex-soldier of the Civil War, who lives in Kansas. He attends the G. A. R. reunions and makes a visit to New Jersey about every five years. He is reading a letter from his nephew. He expects to come East this coming summer to make my mother a visit, and to attend the fair at Plymouth, Massachusetts."

of cash, and the proximity to good markets, makes farming in this region seem very attractive indeed, even to one, like myself, who was raised in the corn belt. Labor is scarcer and higher, however, than in other regions. The natural beauty of the country is very worth while. The gently rolling hills are restful, and do not grow monotonous as some flat countries do.

Good for Michigan!

A principle vital to agriculture is being put to test in Michigan, where the right of farmers to get fair prices is being decided by the Federal Department of Justice.

The sugar-beet growers of Michigan declare that the manufacturers have been profiteering, and demand a price for their beets that will give them a fair margin of profit. Of the approximate 12,000 beet growers in the State, more than 8,000 have signed an agreement not to plant unless there is a fairer division of profit between the factories and the farms. It is believed that a 100-per-cent organization will be effected.

The growers got \$12.50 a ton for their beets in 1919. They have proved that it costs \$11.69 to produce that ton. The price paid the farmer in 1919 equaled \$.057 a pound for the refined product which the manufacturer sold for \$.115 a

the farmers received \$12,512,500 gross profit, and \$805,012 net profit, while the manufacturers' gross profit was \$28,768,750, and net profit \$9,353,093. Michigan is the second State in the production of sugar beets.

Here is a clear-cut issue that cannot well be dodged. Either the Federal Government and the public in general will recognize the justice of the producers' claims, or else they will go on record as being opposed to fair profits and a living wage for the farm worker. The principle involved is of the most vital importance to agriculture and to American progress. Unless the nation recognizes the right of producers to make a fair return on their investment and to enjoy a decent wage for their labor, they will stop producing and desert the farms. Farming should be as profitable as any other business, making due consideration for the slow turnover, the amount of capital involved, the risks of weather and markets, and the labor and brains expended. It must be made permanently profitable so that farmers and their children can enjoy the comforts and pleasures which even the day laborer can give his family in the city. And we farmers have enough confidence in the fundamental fair-mindedness of the American people to believe that they will back the beet growers as well as other producers when it comes to a test.

They "Keep Books"

More than 30,000 Indiana farmers are keeping farm accounts in books put out by Purdue University. Of this number more than 24,000 were distributed through banks in all parts of the State, and more than 5,000 through county agricultural agents. One hundred and forty-six banks in 67 counties have obtained the books for their patrons, and in some counties practically every farmer will be supplied.

The record book contains spaces for farm receipts, expenses, and inventories. It is designed to give the information necessary for income-tax reports, and to help the farmer study his business with a view to increasing his profits. The books, which have been sold at actual cost, 15 cents each, are recognized by agricultural men in every State as among the best. They were compiled by farm-management specialists, and are the result of several years' work with thousands of farmers.

What Helps the Farmer Most?

What agency is most helpful to the farmer?

Among 2,300 farmers of whom that question was asked, 38 per cent said that they received most help from the county agent and the farm bureau. The agricultural press was given first place by 31 per cent. Three per cent of the farmers interviewed said they received most help from farmers' organizations other than the farm bureau, and three per cent said they received most help from bulletins and agricultural reports. Twenty-two per cent had no definite opinions as to which agency was most helpful to them.

These opinions were gathered in a survey made by officials of the States Relations Service, United States Department of Agriculture, in a number of Northern and Western States.

An indication of the efficiency of farm-bureau work is found by contrasting the replies in States where the farm bureau is organized and those where it is not. In the former, 66 per cent of the farmers interviewed placed the county agent and farm bureau first among the agencies that are of service to them, and only 13 per cent placed the agricultural press first. In States that have no farm bureaus, 26 per cent placed the county agent first, and 39 per cent placed the agricultural press first.

One of the questions asked was, "What is the biggest problem of farmers in your community to-day?" The farmers who answered this question were divided as follows: Labor, 682; improved farm practices, 637; marketing, 309; better organization of farmers, 55; financial assistance, 21; roads, 14; repeal of the daylight saving law, 9; schools, 1.

One farmer in every three visited was a member of the farm bureau, and one of every four of some other organization.

Flying Hunters Arrested

"Get out the ship, Henry, and we'll go after that flock of geese we saw last night."

That is just exactly what might happen in a good many cases if hunting from airplanes were not prohibited by federal law. In addition, several States have passed laws forbidding hunting from airplanes, among them being California, Michigan, New Jersey, North Carolina, and South Carolina. There is also considerable sentiment against the practice in sporting circles because it is unsportsmanlike.

The first arrest under the Migratory Bird Treaty Act for hunting wild fowl from an airplane was made in Missouri, recently, when the long arm of the law reached into the air and seized two men for hunting and killing wild geese from an airplane. The arrest was made by a warden of the Biological Survey, United States Department of Agriculture, and following their arrest the hunters made the trip to the office of the United States Commissioner of Agriculture at Carruthersville, Missouri, in their plane.

Grace Margaret Gould Says

Get the habit of always being well groomed and well dressed



A STROLL in the shops is a source of unending inspiration for freshening up one's old clothes.

Slippers have buckles and bows. I saw a pair of strap slippers the other day with a small pearl buckle placed to the side of the strap.

Hats have trig little veils. One new veil is just a yard square, bordered with chenille dots.

And ribbons make the smartest hand bags.



Things Worth Knowing

IF a child's dress is short, lengthen it with a fold of contrasting material sewed to the bottom of the skirt. It is an especially good idea for a dress that is faded so that the let-down hem shows a difference in color. Just cut off the hem and sew a fold of material to the bottom, provided, of course, it is a straight skirt. If the skirt is circular, then the band must be circular too, and the exact flare of the skirt. Folds from three to six inches wide can be used to very good advantage, but some smart little frocks have much wider bands. It is a good plan to add a touch of the contrasting material to the waist in pipings or a new collar.

If you have a fur piece that is shabby, combine it with silk jersey or brocade for one of the new summer scarfs. They are just straight strips of the fabric, about eighteen inches wide, banded with two-inch strips of fur. Seal, beaver, mole, squirrel, or skunk will combine smartly with silk.

If your suit is out-of-date or unbecoming, cut the coat over into an Eton jacket—that is, if you can wear a youthful style. Almost any coat can be made into an Eton. All it means is cutting the coat off about three inches above the waistline. It's quite likely you can use the collar just as it is, but if you want a change make the coat collarless, cut away the front in open style, and wear it with one of the new frilly lingerie blouses. And don't forget to add a crush girdle and sash ends to your skirt. If they are Roman striped ribbon, so much the smarter.

If a skirt is tight through the hips and it happens to be a serge, tricotine or gabardine skirt, the fault can be remedied this season, and the skirt made smarter than it has ever been, with inset side panels of tricolette. Of course, the tricolette must be a matching color. The width of the panels does not matter so much. Some are mere slot seams, and others are four or five inches wide. Some are just plain inset panels, and others have the tricolette laid in cross-wise tucks. If it's a dress, add a collar of the tricolette too; or, if it's a suit, try cutting away the front of the coat and adding one of the new vestees.

If you have one of the old-time gored skirts in smooth material, such as serge, it too can be made up-to-date by combining it with a remnant of tricolette. Cut the gores into straight strips, and alternate them with strips of the silk, pressing the edges of the cloth over the silk, box-plait fashion. Just hang it from a belt of grosgrain belting, and wear with a tricolette outside belt and you will have as swaggy a sports skirt as one could desire.

If you are oversupplied with ordinary blouses, and want one of the new over-the-skirt blouses, try this plan. Cut off the bottom of a blouse until it hangs over the skirt just the same amount at all points. Then gather the lower edge a little, and join fronts and back to bands of contrasting material which extend beyond the side seams in sash ends. As the blouse is to be slipped on over the head, open the side seams for five inches and bind them. When you wear the blouse, knot the sash ends at either side and let them hang down. French blue georgette bands on a tan georgette blouse give a very pretty effect.



The Pattern of the Month

THIS time it's a porch frock—one of those dainty and becoming frocks that have come to take the place of the old doesn't-matter-what-it's-made-of house dress.

The material is a crisp apple-green, tropical print sprigged with yellow flowers. Tropical print, you know, is just a new name for the lawn that is figured in calico patterns. The long pointed collar, the cuffs, and the piping on the pockets are white piqué. There are many other pretty materials it might be made in—calico, chintz, or Scotch-plaid gingham. It's a frock that is easy to slip on, for it's joined together at the waistline. And surely no one could deny the becomingness of its long crossed-over collar, nor the swagger style of the bulging pockets!

Even if you have never sewed before, you need not hesitate to attempt making it. The pattern envelope has a little dressmaking lesson that tells all about the cutting and the making and the finishing. There is a chart to show you how to lay the pieces on the goods, and an identification chart of the pieces.

It's another of the Farm and Fireside practical patterns. No. F. F. 3885—Porch Frock with Shawl Collar and Long or Short Sleeves. It is cut in sizes 34 to 42 bust. The skirt measures one and five-eighths yards around the lower edge in size 36. The pattern costs thirty-five cents. Send your pattern order to Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York City. Make sure that you give all the necessary information. In order to send the pattern promptly, we must know the pattern number, we must know your size, and we must know your full address. Order by bust measure. Unless you are careful to give us all this necessary information, we won't be able to give you the prompt and efficient pattern service that we want all the readers of Farm and Fireside to have.



No. F. F. 3885

About Hats



IT'S crowns that count in hats this season. There's many a last year's crown that will make a smart this-year's hat with a bit of ribbon, a fold of maline, or an edge of lace.

Here are four suggestions: No. 1—A black straw crown with triangular folds of maline wired at the sides, and rosebuds nestling along edge of crown. No. 2—A brown Milan straw crown with loops of brown grosgrain ribbon and yellow silk

fruit tucked in between. No. 3—A tan straw with edges of brim slashed, and bound with turquoise-blue ribbon. The flowers run under the brim in back and over the brim in front. No. 4—A black straw crown with roses close together along lower edge, and a frill of transparent horse-hair braid.

Surely, no woman will hesitate to fix over her hat this season—for, after all, it's the simple hat that is smart.



No. 1

No. 2

No. 3

No. 4

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Looking Your Best

START the day right and you won't treat your skin wrong. Everyone wants to have a firm, clear, glowing skin, one that doesn't get dingier and duller as the years slip by. Only, everyone doesn't know how to achieve this ideal skin, because there's a big difference between just washing your face and giving your complexion the proper care.

Some skins should seldom be touched with soap and water. These are the ones that chap in winter and burn in summer, and become red and irritated after the ordinary washing. They are best cleansed with a cream and a lotion. In purchasing your cream, try to find one that will fulfill several functions. This is the way to save time and money, and nowadays both of these should be considered by all of us. If you are oily-skinned, use a dry cream to cleanse, massage and protect your skin; but if you have a dry skin, cleanse, nourish, massage, and protect your complexion with a cream made of soothing oils. Pat the cream on your face, let it remain for a few moments, then wipe it off with an old soft cloth. Remember that cream is very hard to launder out of towels. Pour some of the lotion on a cloth that has been wrung out in cold water, and gently wipe the face with it. If you use the correct preparations, your tender skin will improve under this treatment.

But I prefer soap and water for the average skin—not any kind of soap and water, or it won't be the average skin long. Don't attempt to use hard water on your face. Boil it, or add the tiniest pinch of borax to it. If you can get rain water, you are in luck, because it's the best cosmetic that is known.

Suit your soap to your skin. If it is sallow, use a buttermilk soap that will whiten it. If it's pimply or blotchy, use a good medicated soap. Glycerine soap is excellent for dissolving the oil on a thick skin. Perfumed soap is a delightful luxury, and an almond-meal soap that will lather freely in the hardest water is one of science's latest discoveries.

Before you retire, wash your face with hot water, rubbing the soap thoroughly into the skin, not skimping at the corners, where the blackhead is likely to lurk. Always rub in an upward and outward motion. This keeps the muscles from sagging, and sagging muscles are the first sign of coming age, you know. Rinse in lukewarm water, slowly changing it to cold. Wrap a piece of ice in a towel, and rub it swiftly over the whole face. If you have no ice, put a few drops of benzoin, toilet water, witch hazel, or any other astringent into the last rinsing water. If your face feels drawn and taut after this treatment, pat in a little cold cream. If you use real cream, or even milk, it will improve your complexion quickly. Let it stay on all night.

All you need to do in the morning is to wash your face in lukewarm water and dash some cold water on the eyes. If your face needs to be cleansed during the day, wipe it off with your cleansing cream, and if your nose should shine after the use of the cream, dust it off with a little pure powder that matches your skin in tone.

You see, there are many ways of washing your face, and if you wash it right it can't look wrong.

Do You Know That

Tight shoes cause wrinkles between the brows that look like frowns?

A little warm olive oil rubbed into the cuticle each night will make weak, brittle nails strong and easy to manicure?

Deep breathing makes a thin woman plump, and a stout one slender? If you don't believe me, try it for yourself.

All inquiries answered if a stamped and addressed envelope is enclosed.

Mr. Coon's Strange Adventure

Why a portion of a coon's face is black, and how he got his ring tail

By Frank A. Secord

(Copyright 1920 by Frank A. Secord)

Illustrations by Edwina Dumm



The other old women were not on the watch for any except a pale-faced coon

A COON was sitting by a stream one day, amusing himself by making droll faces in the water and laughing at the reflection. The sun shone bright and hot, so it was not strange that Mr. Coon was suddenly called from his fun by the dull rumbling of thunder.

"It's going to rain," Mr. Coon muttered, and just as he did so his face was splashed with water. There were some clouds above, but he could not make out how it was possible for so much rain to fall at one time and in just one spot. As he looked at the sky, his mouth half open, he got another splashing, and then he noticed that the water did not come from above, but from one side.

"Smarty!" cried the drenched fellow, rising and trotting through the weeds that stood between him and the creek. He found a badger in the act of filling a clamshell with water, to throw, no doubt, where the other water went.

"Stop it! I have my paws crossed and I see you," Mr. Coon called to Mr. Badger, who threw the clamshell away and sat down, laughing. Said he:

"It is sure enough going to rain, Mr. Coon," and just then, as if the coming storm wished to prove it, loud claps of thunder sounded, and forked lightning zig-zagged across the sky.

Now, everybody knows that badgers dig holes whenever and wherever they wish, and that they generally dig plenty of them; so when Mr. Coon remarked that he guessed he'd be trotting on to find some shelter the badger invited him to change his mind, saying:

"I find it well, Mr. Coon, to have a handy refuge here and there, for a fellow cannot tell when he will need it. Follow me and I'll take you to a hole where the rain will not blow in, and we can visit while the storm lasts."

Therefore it happened, a few moments later, that the badger and the coon were snugly curled up in a hole under a shelving rock just at the edge of the woods.

When the two were settled, the badger playfully toyed with the coon's tail, and said something about its being pretty.

"It is not a bad tail, I think, myself," Mr. Coon said; "but, according to a tale which I have heard many times, coons did not always have tails like this."

"How is that?" Mr. Badger inquired, and as he spoke, a loud crash of thunder shook the earth and rain began to fall.

"That thunder and rain brings the story to my mind very readily," Mr. Coon answered, and then he folded his tail at his side and told the badger this:

"You know it is said that there is a pot of gold at the end of every rainbow, and that the first one who gets to the rainbow's end can find it, may keep it, and have it to use as he sees fit. Well, friend Badger, you may believe what I say when I tell you that there is no pot of gold at any rainbow's end; that there never was any, and never will be any; that folks who are foolish enough to chase rainbows have but their pains for the trouble."

"A grandfather coon, who was buried before there were any big trees hereabouts at all—and that was a long time ago, you will agree,—heard the tale about the pot of gold, so he made up his mind to get one the very first time he had the chance. He stood out in a bad storm one day, and when the rainbow came he set out, running as fast as he could, toward the end which seemed to be just over a hill. He ran and ran, but the rainbow's end was just a little farther away all the time. He went over hills and through valleys, and at length came to a deep woods where he had never been before. He seemed close to the end of the pretty streak now, so he dashed into the deep woods, his breath coming quick and hard, for he was all but tired out. Suddenly he heard a voice call to him to halt, and he did so, complaining that he would lose his pot of gold."

"Pot of gold!" the voice mocked. "How do you expect to gain a pot of gold without doing something for it?"

"I am running hard for it," the coon said; and there appeared a witch of the woods who pointed a finger at the impatient coon.

"What do you give to pass?" the old woman asked.

"I have nothing," the coon answered. "When one runs fast as I have run, one does not carry anything with him."

"THE rainbow seemed to be fading a little, so the coon, fearful of losing his prize, offered the old woman anything she might ask, and she decided that a piece of the coon's tail should be the price."

"Take it!" the coon cried, and at once the old woman snipped a bit off the nice long, glossy tail of Mr. Coon.

"Good-by—didn't hurt a bit!" the animal shouted, hurrying forward.

"He had gone but a short distance when he was again halted, and again had to give to another old woman of the woods a bit of his tail."

"On he ran, and on he ran, and on he ran, every little while being stopped to part with a piece of his tail."

"Well, he finally came to the end of the rainbow, just as it was lifting from the

ground—so the story goes—and, half dead with having run so far and so hard, Mr. Coon dashed at an object which looked like a black pot. Picking this up he cried to the sky, 'I have it!'

"What have you?" a curious voice asked, and one of the old women of the woods appeared.

"I have the pot of gold!" the coon answered gleefully.

"That may be true," the old woman said, "but it is also true that you have no tail. It is a sure thing that you have not that."

Mr. Coon turned pale.

"I," muttered he, "have gained a pot of gold, but I have lost my tail. What will my folks say?"

"You have gained nothing yet, for you must pay me to return through the woods," the old woman said, barring the way.

"I have no more tail to give you," whined the poor fellow; "but I will give you some of my gold."

"Well, the old woman reached in the pot and closed her hand over something inside, then drew it out."

"This," said she, "is my toll."

"Mr. Coon smiled, for he knew that she did not take much from the pot."

"The old woman of the woods then held her hands to her mouth, making a sort of speaking tube of them, and cried at the top of her shrill voice to other old women of the woods:

"Oh, ho! Look out for a pale-faced coon, get your toll and let him pass, for he is not at all selfish!"

MR. COON was selfish, though, and he did not wish to part with any more of his prize, so he thought he would fool the other old women of the woods. He paused under a bunch of grass and daubed his face with mud, so he wouldn't look pale; but in his hurry he didn't get the mud all over, although he plastered it across his face until he appeared to have a mask on. "Now," thought he, "they will not notice me, for I won't be pale."

"He succeeded in gaining his home, for the other old women were not on the watch for any except a pale-faced coon. Once home, he went about singing lustily of his pot of gold, swinging it as he went. Coons who came to see were curious, but at once they noticed the happy fellow had no tail."

"Your tail!" hundreds of coons cried in horror. "Where is your tail?"

"Mr. Coon tried to explain, saying that it did not matter so much about his tail, now that he was rich and could get anything he wished."

"If that is true, you'd best hunt up a tail and buy it," he was told; and immediately every coon in the country began to shun him."

"Mr. Coon carried his pot of gold back to the woods where the old women were, and, meeting them in turn, asked for the bit of tail which each took from him."

"You thought to escape me," each old woman said, "so you have all this trouble for nothing, Coon. For a portion of the contents of the pot you may have your bit of tail."

"Well, the unlucky fellow bought all of his tail back, but he carried the pieces, and it did not dawn upon him until he again reached home that a tail in pieces would do

him no good. It did not dawn upon him, either, that he had not yet looked into his pot. For the first time he noticed that it was not heavy enough to be filled with gold. He lifted the lid, and just as he did so—mind you, it was now dusk—thousands of gold pieces flew out of the pot and away."

"Wait!" called the fearful animal. He tried to push the lid down again, but this he could not do. Through a crack that would not close his gold flew away."

"Mr. Coon sat down and cried. He had an empty pot now and no tail. He was disgraced in the eyes of his kind, and very tired and footsore he stole back to the old women once more."

"My tail!" wailed the visitor.

"Go wash your face before you address ladies!" one old woman cried angrily, for Mr. Coon's face still had the mud on it.

"Accordingly, the coon trotted to a pool and washed his face, but the black stains of mud would not come off. He rubbed until his skin smarted, but it was no use. 'My tail!' he moaned, and at last one of the old women came to him and said:

"Coon, you have played a very mean trick upon yourself. You sought, a while ago, to cheat us, who are the guardians of these woods. We watched for a pale-faced coon to pass our way, but none came; so you got home the first time with nearly all the contents of your pot. Now we are willing to help you out, scamp that you are; but in order that it will never again be said that anybody will be on the lookout for a pale-faced coon you shall always wear the black mask across your face."

"Mr. Coon felt for a mask, but none was there."

"Oh, I mean the black streak that you painted there!" the old woman growled. "Of course you cannot feel it."

"That is not so bad; but I have no tail!" whined the animal.

"For your selfishness you shall have to go without a tail for a time," was the answer. "Do the best you can until the proper day arrives, and then you may be better off than now."

"The old woman of the woods disappeared, and Mr. Coon went back home, where he did the best he could day after day, getting his food at night."

Often, as he (CONTINUED ON PAGE 32)



The coon, sitting at the pond with his tail in the water, was observed by many of his kind, who inquired what he did there



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Taskmaster of Tubes, the Meter

FEW motorists can speak with as much authority on the subject of tubes as the pilot of a taxicab.

For five years, Benjamin Berman's meter has clocked Chicago's streets as he carried his fares on Goodyear Tires and Tubes.

Pounding over the asphalt, thudding against the curbs, grinding in the car tracks, think what punishment is meted to the tubes.

Yet Berman's tires last almost unbelievably long and he attributes their longevity to the constant use of Goodyear Tubes.

The life of a casing is, of course, dependent

on the quality of the tube. And Goodyear Heavy Tourist Tubes are unusually staunch, built up as they are of pure gum strips, placed *layer-upon-layer*.

These tubes, which come packed in heavy, waterproof bags, cost no more than tubes of less merit.

Surely it is poor economy to risk a costly casing when such faithful protection is available.

Like all Goodyear Products, Goodyear Heavy Tourist Tubes are built to protect our good name.

More Goodyear Tubes are used than any other kind.

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GOODYEAR
HEAVY TOURIST TUBES

Do You Get Your Money's Worth Out of the Horses on Your Farm?

By A. S. Alexander

Professor of Veterinary Science, University of Wisconsin, and Director Division of Horse Breeding, Wisconsin Department of Agriculture

MORE than ever it is important that our work horses should be fed and cared for properly. Feed has become very expensive, and the best class of draft horses is becoming difficult to find and dear to buy.

The prospect is that horses will increase in scarcity and price, for breeding operations have been greatly reduced. We ought, therefore, to resume breeding, and endeavor to lessen expenses of maintenance by wiser and more economical feeding.

Considering the present value of horses, and the loss certain to result from the purchase of a sick, unsound, inefficient animal, it will pay the buyer to employ a qualified veterinarian to examine his prospective purchase. On general principles, however, there are a few fundamental matters every man should remember when buying a horse.

The horse should be seen and watched at rest in his stall. Here you can notice if he is a "weaver," constantly swinging his head from side to side, or a "cribber and wind sucker," now and then seizing hold of the manger with his teeth and gulping down air. These are incurable vices.

It is well also to make sure that the horse is not a chronic biter, stall kicker, halter puller, or floor pawner, and that he does not destroy his clothing and harness. See, too, that he can "get over" in his stall without "hopping" from spavin, and back out of it without jerking up a hind leg, elevating his tail, and showing involuntary twitching of the muscles of the flank, indicating chorea (St. Vitus' dance) sometimes termed "shivering" or "crampiness." Be sure, also, that there is not a double, bellows-like motion of the abdominal muscles at the flanks, for that is characteristic of heaves.

Next, allow the horse to stand at ease on a level floor, away from the walls, and examine him from all points and at a little distance. By so doing you can note if the horse stands firmly on all fours, or shows signs of pain or discomfort, indicating lameness. See if his eyes are sound and of the same color. All parts of the body are quickly viewed for symmetry and, if trained in such work, the buyer next may proceed to make a critical examination of each part for soundness.

Afterward, he will watch the horse walk away and back, repeat these acts at a trot, and "wind" the animal by having him run hitched to a locked-wheel wagon or through a plowed field or deep snow. Unless aided by a veterinarian, the buyer should even then demand a written guarantee of soundness, so that the horse may be returned to the seller, inside of a stated period, if found to be unsound.

WHETHER the stable be expensive or cheap, it should be dry, light, and perfectly ventilated. A damp basement stable, or one built on water-logged ground, will be certain to induce rheumatism, thickening of the tendons, and stiffness of the legs and joints, and cause or aggravate coughs and colds. In such a stable the horse's skin will not be pliant, and the hair will be coarse, harsh, and staring, not silky and polished as it should be in perfect health.

Light is necessary to insure health and vigor in animals as well as plants. The potato sprout that is blanched and brittle when growing in a cellar turns green and sturdy in the sun. The prisoner in a dungeon is pale and weakly, but grows rosy and rugged in the open air. Sunlight in a horse stable should not, however, be dazzlingly reflected from a whitewashed wall. That is hurtful to the eyes, so lampblack or yellow ochre should be added to lime-wash to give it a neutral tint.

Fresh air is even more necessary than

sunlight. Good ventilation supplies adequate oxygen to the stabled horse, and it is needed during the dark as well as the light of the day. No animal long remains perfectly healthy if constantly deprived of practically the full 20 per cent of oxygen normally present in fresh air. Poisoning of the system, then, is quickly and plainly indicated by general ill thrift, and the unhealthy animal wastes feed and fails to do efficient work. It is in such unsanitary stables that glanders, influenza, strangles, pneumonia, pleurisy, bronchitis, sore throat, and colds and coughs are most common and virulent, and here, too, occur all forms of indigestion and skin diseases and the parasites peculiar to the horse.

IN ADDITION to proper sanitation, the stable should be roomy to allow each horse a stall that is nine feet long and at least four and one-half feet wide. The alley floors should be solid, and roughened to prevent slipping, the stall floors practically level, and drains, if used, carefully trapped. Large box stalls should be included for the accommodation of idle or sick horses and the brood mare and her foal.

Wheat and rye straw are excellent bedding materials. Oat straw and hay are unsuitable, as a horse should not eat his bedding. If he does, bed him with planing mill shavings or sawdust, but avoid oak sawdust, as it injures the feet. Dry peat litter is admirable, but not commonly available.

Always let a lame horse occupy a box stall, bedded with sawdust. Support him with veterinary slings, if so lame that he is unable to stand on all fours without suffering severe pain. In bedding a stall put plenty of litter at the sides, as a horse lies upon his side when sleeping or resting. Dry soiled bedding out of doors, preferably in the sun. If that is impossible, air it in a box stall instead of piling it under the manger. Have the manger come down flush with the floor, and keep it clean. Keep rats, mice and poultry out of the stable.

Groom every work horse once a day, preferably out of doors, to prevent dust in the stable. Use lots of "elbow grease" and a clean brush. The currycomb should be used chiefly to cleanse the brush, not the horse's skin. It should never be used on the head or legs below knees and hocks. Don't use the same sponge to cleanse the dock, anus, nostrils, and eyes.

Blanket and walk a sweaty horse until dry; then put on a dry cover. Frequently wash the roots of mane and tail. Always dry the legs thoroughly by rubbing in fine sawdust, when washing has proved necessary. Ordinarily it is best to let mud dry on the legs and then brush it off. Scratches and mud fever often are caused by washing the legs, not drying them thoroughly, and then letting the horse stand in a cold draft. These, also, are contributory causes of grease and grease heel.

Clean out the feet each time the horse comes into the stable, to prevent nails from puncturing the hoof; or, better still, have a thick leather pad or special hoof pad under the shoe to prevent picking up of nails. Under the pad have oakum over

a dressing of lanolin (wool fat), and frequently reset the shoes.

Blanket the horse in cold weather. When he is standing out of doors during working hours see that the blanket perfectly covers his breast and chest.

Clip a horse that has indigestion, or a long, coarse, staring coat, or if he sweats in the stable after coming in from work. In such cases, among farm horses, it suffices to clip the hair from the legs above the knees and hocks and from the abdomen to a line with the straps of breast collar and breeching. It is a common practice, and a good one, to leave the hair unclipped where the saddle rests on a riding horse.

See that all harness fits properly, and keep it clean and smooth. Remove harness at noon, unless that is absolutely impossible. Always remove it at night. Dirty, rough, ill-fitting collars cause sore necks and shoulders.

Sponge harness-chafed skin two or three times daily with soft, cold water containing two teaspoonfuls of salt to the pint. Sweat pads often do more harm than good, and are not an apology for a bad-fitting collar. Properly adjust the hames and tugs (traces), and prevent the neck yoke from striking the breast, or a limber wagon pole from swinging so that it causes the collar to ride and chafe the neck.

Have shoes reset at least once in six weeks, and once a month if the hoofs grow fast. Have the shoes fitted to the feet; not the feet to the shoes, any more than can be helped. Never apply a red hot shoe to the pared sole. Do not allow excessive paring of the sole, and have the knife kept off the frogs and bars. The heels should not be "opened." The deep notches commonly made really tend to contract the heels. Only rasp enough of the wall to form a bed for the nail clinches.

See that toe clips are not too large and thick or too tightly driven. Have the hoofs and shoes level and see that the heels are of equal length. Avoid use of strong, drying hoof-dressing oils and salves. They are unnecessary and hurtful. Have the horse's teeth put in order by a veterinarian each spring and fall.

FIGURE that a horse requires as a day's ration approximately one pound of grain or meal (concentrate) for each hundred pounds of body weight, divided into three feeds, and that the feed should contain at least one pound of digestible protein for 1,000 pounds of body weight. In the same way allow one pound of hay (roughage) for each hundred pounds of body weight as a day's ration, most of it to be given at night, some of it in the morning, and little or none of it at noon, if the horse has been working hard. Increase concentrates and lessen roughage when hard work has to be done, and in the same way reduce grain feed and increase roughage during idleness. Always cut down the grain ration at least one half when the horse is idle, and withhold all of it when protein-rich clover or alfalfa hay is fed. Remember the advice given in a previous article—namely, that no horse ever should be allowed to stand for a single day without work or exercise, and that rich feed always should be reduced when there is no work for the horse to do. Every horse, by rights, should be out of doors four or five hours a day, and should have from six to eight miles of exercise daily.

Cost nowadays largely decides which concentrated feeds a horse may have. Oats remain the standard feed for horses in the Northern States, and should be fed when the price is not prohibitive. This grain should

be clean, dry, bright in color, have a fresh earthy smell, and be so plump that it will rattle when thrown into the feed box. Old oats are preferable for horses. Southern horses long have subsisted principally on corn, which is a highly concentrated and nourishing feed. When cheap enough it may well replace part of the oats for any horse. Ear corn is best for horses. At present, however, corn is much too high in price to be used freely when other cheaper foods can be obtained. Barley and other cereal hays are the standard feeds for horses on the Pacific Slope, and barley may be substituted for a part of the ordinary ration of oats. It should be rolled to fit it for horse-feeding. Fed in excess or suddenly, it tends to induce an eruption and itchiness of the skin. Wheat and rye also should be rolled and sparingly fed, along with oats and bran.

WHEAT bran is another splendid substitute for part of the oat ration, or as a beneficial adjunct to that feed. Do not feed it in the form of a hot mash on Saturday night, as so often is advised. So fed, it is a fertile cause of colic and less severe forms of indigestion. Feed it daily, mixed with whole or crushed oats and dampened, at meal times. A hungry horse may choke if suddenly fed a lot of dry bran. A little dry bran mixed with whole oats will, however, induce more perfect mastication. Feed it from a large, shallow box. A handful of hard peas, or horse beans, or shelled corn mixed with whole oats also tempts a horse to chew his feed properly when he has been in the habit of bolting it whole. It is much better to feed such a mixture than to put cobblestones in the feed box.

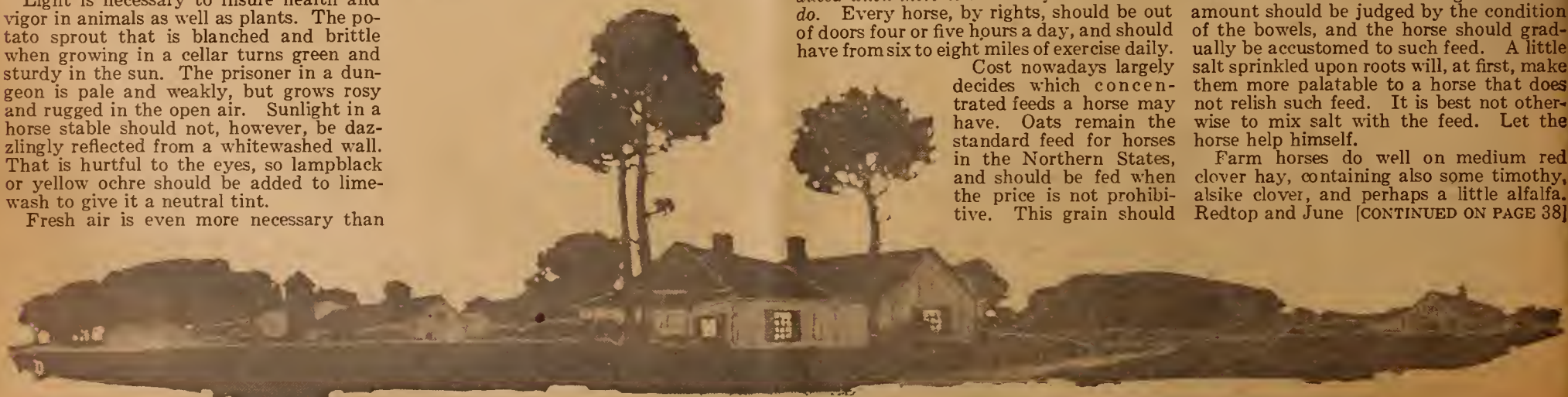
Cane-sugar molasses (blackstrap) also is a valuable addition to the horse's menu. In some of the Southern States it is freely fed to work horses, but in the North it is usually too expensive to form more than a small part of the ration. A quart of molasses diluted with the three quarts of hot water and stirred among cut hay, cornmeal, and wheat bran has been fed with excellent results, night and morning, to thin work horses.

It may be necessary at first to starve the horse to eat molasses feed; but soon he takes to it with relish, and thrives amazingly. Army horses that have become run down and galled by harness have quickly recovered condition and soundness of skin when fed such a ration, or molasses in much larger quantities.

Flaxseed meal is especially beneficial for regulating the bowels and putting a gloss upon the skin. About one pound of it may be fed, as a general rule, care being taken not to give so much that the bowels will be too much relaxed, yet using enough to keep them active. It should be wetted at feeding time, otherwise it tends to stick to the teeth and gums. Cottonseed meal or cake, if used at all, should be very sparingly fed, unless the horse has been accustomed to this feed from colthood up.

Roots have a splendid effect upon the bowels and skin. Carrots are most popular for horses, and parsnips come next. Rutabagas also are relished, while a few raw potatoes often are fed to the horse, and especially to colts with the idea of ridding them of worms. In feeding roots the amount should be judged by the condition of the bowels, and the horse should gradually be accustomed to such feed. A little salt sprinkled upon roots will, at first, make them more palatable to a horse that does not relish such feed. It is best not otherwise to mix salt with the feed. Let the horse help himself.

Farm horses do well on medium red clover hay, containing also some timothy, alsike clover, and perhaps a little alfalfa. Redtop and June [CONTINUED ON PAGE 38]



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"Now we can dance"

In thousands of pleasant vacation places this happy scene is repeated every year.

With this Vacation Model Columbia Grafonola you can dance to the very last note of every record. It is equipped with the Columbia Non-Set Automatic Stop, which operates on any record, long or short. Nothing to move or set or measure. Just put on your record and the Grafonola plays and stops itself.

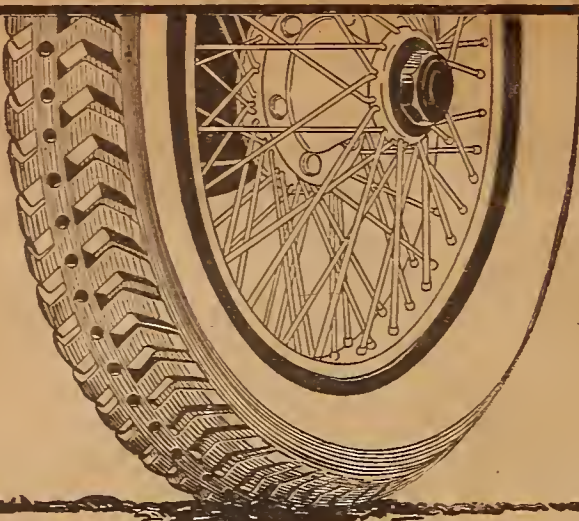
Sweet and clear of tone, light, compact, and easily carried, this wonderful little Grafonola is a never-failing entertainer for vacation days.

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15,000 miles per tire in constant tests

Men are everywhere telling remarkable tales about mileage on Miller Tires.

Some cite up to 25,000 miles. Many certified tales, even on trucks, exceed 22,000 miles.

But these are not average conditions. They are usually oversize tires, well cared for, under-loaded.

What to expect

Millers will increase your mileage. Records taken in Boston, on hundreds of cars, show an increase of 50 per cent to 75 per cent.

We have in late years nearly doubled our mileage by perfections in the Miller Tire.

In our factory, eight tires are run on geared-up machines 650 miles

They will bring you uniformity. Every Miller Tire is signed by maker and inspector. Both are penalized if a tire falls down.

Don't judge tires by old criterions. See what Miller Tires will do.

Make this test

Tests are bringing men to Millers. Ten times as many are now used as in 1914.

Big tire users, who make million-mile comparisons, are adopting Millers everywhere.

Put one on your car. Watch the mileage. Compare it with the tire that's opposite. Learn what modern tires can do.

If you buy a new car, insist on Miller Tires. Twenty makers now supply them without extra cost.

Three tires

Ray C. Carpenter tested three Miller Tires on a 22-passenger bus, carrying 3 tons per trip. The first ran 23,700 miles, the second 17,000 miles, and the third 22,000 miles without a blowout.

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Makers of Miller Red and Gray Inner Tubes
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each per day. They are run under rear-tire conditions. And the average mileage on Miller Cords is 15,000 miles.

Other leading makes are constantly compared with them, but the Miller excels all.

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Miller Tires will completely change your standards.

They will give you new ideas on the mileage to expect.

They will bring you treads which outwear the tires.

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Center tread smooth, with suction cups to firmly grasp wet asphalt. Geared-to-the-Road side treads mesh like cogs in dirt.



Miller Tires

Cords

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Now the Tire Sensation

Get a WITTE

I will ship you any style WITTE—2, 3, 4, 6, 8, 12, 16, 22 or 30 H.P.—Stationary, Portable, Saw Rig—on a Lever Control Drag Saw on short notice. Cash or Easy Terms. Tell me WHAT you want and WHEN. Latest improvements—lowest prices. Anything you want in the engine line.

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Arm-Swing Lever Control



Photo by Nathan R. Graves

Old-Fashioned Roses

THEY ain't no style about 'em.
And they're sort o' pale and faded,
Yit the doorway here, without 'em,
Would be lonesomer, and shaded
With a good 'eal blacker shadder
Than the morning-glories makes,
And the sunshine would look sadder
Fer their good old-fashion' sakes.

James Whitcomb Riley

Marketing Those June Broilers

By R. G. Kirby of Michigan

I HAVE found that the American breeds of poultry make the most profitable broilers. Leghorns are fine for the hotel trade where small portions are served, but I find most housewives prefer a three-pound bird, and our local dealers ask for that weight. Plymouth Rocks at an early age make fine, juicy three-pound broilers. The Wyandottes are a superior breed for broiler raising.

I always grade the broilers, and sell them in crates containing birds of a uniform weight. A dealer asking for a crate of three-pound broilers does not wish birds ranging from 1½ to 4 pounds. If a hotel or restaurant manager is purchasing broilers, he wants the birds to be of equal size, so the portions will look alike when served to his trade.

Birds of one breed make the best-looking crates of broilers. It is also possible to sell stock of a more uniform weight if they are all of the same breed. If scrub birds range from the Leghorn to the Asiatic type, there will be a great variation in size and quality, even though the ages of the stock are the same.

Some fattening is usually profitable. Confine birds in a colony house or fattening crate. Give them a thin mash of cornmeal and sour milk for about ten days. Keep them stuffed by feeding all they can eat in a short time, but do not allow the mash to remain in the trough, as it will throw them off feed.

Know where your market is before beginning the fattening process. It never pays to ship lean birds. When you use valuable feed to develop the frame and feathers, it never pays to ship them until that frame is padded with a little meat and fat. The broiler with a back like a washboard will never bring second orders.

Early broilers bring the best prices, as

there is less competition. In many small towns there is not a strong demand for broilers. Most families prefer a fat hen, and consider it more economical; or perhaps they have a back-yard flock and raise surplus cockerels themselves. Large cities use thousands of broilers, and you can form business relations with commission men who are prompt and square in their dealings. When you find such a dealer, it pays to give him the business rather than speculate with unknown buyers.

Sunday is the day for broiler dinners in the cities, and your stock must reach the dealer in time for the Friday and Saturday trade.

I have found that it pays to turn the broilers into cash as soon as possible, so the feed and the range may be used for the pullets. There is little gained by keeping large numbers of surplus cockerels beyond the broiler age unless they are caponized or used for breeding stock. When selling, it pays to save a few of the best early-hatched cockerels for breeders, as the early birds have better chances to develop into vigorous breeding stock.

Greatest Fur Sale

WHEN the hammer fell to mark the last day of the winter auction fur sales in St. Louis, more than \$27,000,000 had gone over the block in the greatest fur sale the world has ever known. A total of 1,500,000,000 pelts were sold. During the past year these sales have aggregated approximately \$65,000,000.

Upward of 350,000 distinct species of insects have been described, the majority of which are, in some way, injurious, and at least as many more remain undescribed.



Note How Essex Trebles Motor Power

Because of Patents the Essex Motor is Exclusive. Therefore Its Performance is Unmatched by Any Light Car. Retains Every Economic Advantage. Gives Big Car Performance and Reliability

The swing of interest to light cars, led by champions of the Essex, calls for particular caution.

Some may think Essex only one of the finer type, marking a general advance in standards throughout the light car field.

But the facts quickly expose that mistake.

For the Essex motor is patented. No other can use it. And Essex performance, so enthusiastically admired by all motordom, is the product of that exclusive invention.

All Results of Its Patented Motor

Essex has set the greatest official endurance record of 3037 miles in 50 hours. It has never been equalled by any other car, regardless of size or price.

And Essex made the world's 24-hour road record, by traveling 1061 miles over snow-covered Iowa country roads.

For cars of its piston displacement, it has won every official record, from 1 to 50 hours. It has proved speed such as only the fleetest of costly cars can rival.

And in its first year, it set a selling record, never equalled in motor history.

It creates a new standard of light car capacity in a totally new type. And it cannot be copied. Do not forget that. No other can use its motor or the principle which accounts for its superiority.

Three Times More Power in the Same Size Motor

That is what the Essex invention means. Three times more power need not mean a thrice-better car. But consider how the enormous power of Essex is derived. That is the important thing.

No larger than standard motors that yield by 18 H. P. at utmost, the Essex delivers 55 H. P. Neither size nor great fuel consumption figure in the high-power of the Essex motor. That is its great advantage over other types.

If you cannot get immediate delivery of an Essex, consider if its exclusive advantages are not worth waiting for, as against a less wanted car. The daily production exceeds 125 cars. More than \$35,000,000 was paid for the first year's output.

Essex Motors, Detroit, Mich.



Did You Ever Lose a Dollar?

THAT is what it means to you when you drop and break a spark plug. At least one out of every twenty spark plugs is broken in one way or another. Champion Spark Plugs with an annual output of over 25,000,000 thus save their users over a million dollars a year on breakage loss alone.

Our famous No. 3450 Insulator has been developed and strengthened to such a degree that car owners who use Champion Spark Plugs are free from spark plug breakage as well as from trouble due to excessive heat, shocks and temperature changes.

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Toledo, Ohio

Champion Spark Plug Company, of Canada, Limited, Windsor, Ont.



Things You Can Do to Boost Your Corn Yields

By L. E. Call

BIG yields of corn are not grown by accident.

They may result from using correct methods in growing the crop. The rotation, the preparation of the soil, the character of the seed planted, and the way the crop is cultivated are the important things within control that affect the yield.

Corn is very sensitive to soil conditions. It requires a deep soil well supplied with plant food for its best growth. At the Ohio Experiment Station, where corn, wheat, and oats have been grown continuously for twenty-five years on the same fields, the yield of corn has declined more rapidly than either wheat or oats. Where corn has been grown with these crops in good rotations, which include clover, and when barnyard manure and commercial fertilizers have been used to supply plant food, corn has made the greatest increase in yield.

Corn should not be grown many years in succession on the same field. The best yields are obtained where it is grown after the clover or some other leguminous crop, and when barnyard manure, reinforced with a phosphatic fertilizer, is applied.

Experiments conducted by many experiment stations and by the United States Department of Agriculture have shown that a good quality home-grown seed of an acclimated variety of proper size will out-yield seed introduced from any other locality. This is especially true when seed is moved from a good to a less favorable corn-growing region. For example, corn grown on the rich glacial soils of Illinois, Iowa, and northern Missouri is not satisfactory for seed on the less fertile residual soils of southern Missouri, Kansas, and Oklahoma. The best corn to plant is seed that has been properly selected and grown in your locality for many years.

Many people think that it is necessary to change seed every few years. This is not true. The only time that it is desirable to change seed is when a poor variety of corn is grown, or when no effort has been made properly to select seed year by year. In that case it will pay to secure good seed from a reliable corn breeder near at home.

Three objects may be accomplished by cultivating corn: First, the destruction of weeds; second, the conservation of moisture; and third, the liberation of plant food from the soil. There is no question but that thorough cultivation accomplishes all three of these objects. Whether the conservation of moisture and the liberation of plant food are the result of stirring the soil or simply result from the fact that the weeds are destroyed by cultivation is a disputed question, however. That the question is of practical importance is evident. If the elimination of weeds is the principal result accomplished by cultivation, and moisture and plant food are saved because the weeds are killed, there is no object in cultivating a field of corn in a dry season after the weeds have been destroyed.

It appears, from the results of recent experiments, that the destruction of the weeds is by far the most important and that when corn is planted on a well-prepared seed bed, and is cultivated enough to kill the weeds, any additional cultivation will be injurious rather than beneficial.

A rotation of crops that keeps weeds under control, thorough preparation of the ground before planting, and the use of the smoothing harrow that destroys the small weeds as they are germinating before the corn is large enough to work, will be the most effective way of fighting weeds, and will greatly reduce the cost of cultivation.

How Late Can I Hatch Chickens Profitably?

By Victor G. Aubry

EVERY summer we see thousands of small, stunted, scrawny chicks. Every year we hear poultry keepers say they will never hatch late again.

Every year hundreds of farmers are short a few chicks at the end of the hatching season, and most always these people will say, "Well, I'll bring off just one more hatch and take a chance."

There is absolutely no doubt that the spring of the year is the best time to hatch, because the breeders are in better condition, because the weather is correct, and because all nature is just at the right stage. The grass is green and soft, and pastures are at their best. The question arises, "How late may we hatch profitably, or with a reasonable certainty of growing good stock?"

In considering this matter we will look at it from the farm-flock standpoint, and not particularly consider the commercial poultryman, who is equipped to overcome to a certain extent some of nature's drawbacks. The proper seasons to hatch will vary considerably according to latitude and climate, but one can safely lay down the following rules:

Just as soon as the ground begins to thaw, and as soon as the first signs of green appear in the grass, is none too soon for chicks to hatch.

From this time on, everything else being equal, the quicker we can bring our chicks off the better. Very often there will be all the chicks needed before the hatching season is half over. But where mishaps

have occurred, we must know how late to continue, and here real knowledge of the subject is important.

It is well to discontinue to hatch after field corn has been planted, and surely before it is more than four or five inches high. Many times we would like to bring off just one more hatch because we are short a few chickens. If the hens are still laying well, it is advisable to bring off this extra hatch before corn is knee-high in the field. Under no circumstances should your hatch come off after that.

You can do a great deal to pull this late hatch through. First, keep them in a well-ventilated house, and guard against smothering and sweating at night.

Second, it is exceedingly important that late chicks have forage, such as grass, rape, alfalfa, clover, or almost anything green and succulent. If it is at all possible, change the yard that these chicks are to use.

Cutting and carrying the green stuff to them won't do—they must range on it. Buttermilk, skim milk, or a good grade of condensed buttermilk will be found especially valuable.

Third in importance is shade or protection from the hot sun. Trees of some kind are the best for this. Although shade is important, a green crop should not be sacrificed in order to get trees, as it is not so important, and artificial shelter can be provided. If you watch these things you will have success with your late hatches.

With a Federal on the Farm



Feeding-time and the Federal

Feeding—in the feed lot, stables or shipping pens—is just another one of the big farm tasks that can be made little with a Federal on the job.

It's the simplest kind of a task to load the feed on your truck, fill the feed troughs, and the job is easily, quickly and economically accomplished.

But this is only one example of the great utility of a Federal on the Farm. After you have used a Federal on almost every conceivable job that is found on your farm, you will wonder how you ever got along without it.

Ask the Federal dealer nearest you to assist you in selecting the type and capacity that will most nearly fill your requirements.

FEDERAL MOTOR TRUCK COMPANY
DETROIT, MICHIGAN

Another
FEDERAL
One to Five Ton Capacities





America's First
Cord Tire

GOODRICH SILVERTOWN CORD

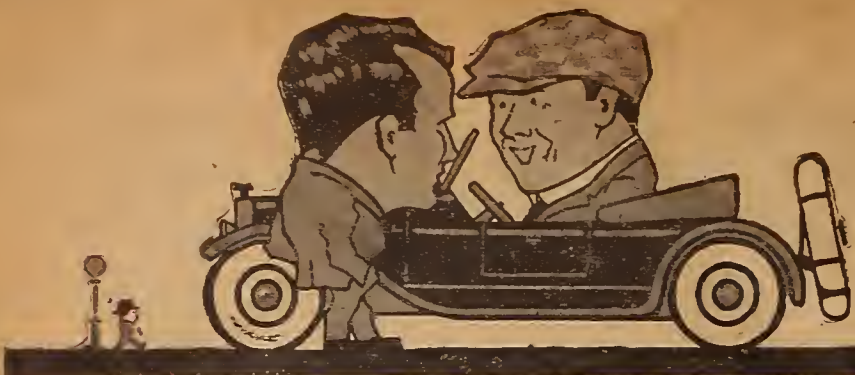
THE FIRST cord tire
made in America was
a Goodrich.

Goodrich still makes the
first cord tire in America—
The Silvertown Cord

Goodrich Tires

Best in the Long Run

The B. F. Goodrich Rubber Company, Akron, Ohio • Adjustment Basis: Silvertown Cords, 8000 Miles; Fabric Tires, 6000 Miles



"Look what I did, Joe!"

"Sure Elmer, didn't I tell you you could do it with Effecto Auto Finishes? Everybody's cuttin' down the high cost of motorin' that way! It's wonderful the way they buy Effecto."

It's about as easy a way as you can find to save \$50 or \$75 while old General HCL is in control — give the old car a coat of Effecto Auto Enamel.

Wm. Peters, from the Panhandle of Texas, drove a sturdy red Stutz into the quiet and peaceful confines of Long Beach, Cal., the other day, and that smooth snappy red made 'em all stop, look and listen! One of the admiring bystanders asked the envied Mr. Peters the name of the brand that gave him all that splendor. He said, "It's Effecto Auto Enamel and you can tell anyone they can put it on and have a lot of fun doing it!"

Effecto is the *genuine, original* auto enamel; nine good colors to choose from: Black, Blue, Green, Red, Brown, Yellow, Gray, Cream and White, also clear Finishing varnish, and Top & Seat Dressing for renewing and waterproofing old tops, whether of fabric or imitation leather, as well as seats and upholstery.

Effecto
AUTO
FINISHES

Effecto Auto Enamels are easy-working, self-leveling and quick-drying. Not a paint, wax or polish. Effecto wears longer than the finish on most new cars.

Keep a can of the Black in the garage. You'll find it handy for touching up rusty spots on fenders and chassis. It prevents rusting and keeps your car shipshape.

When you go to buy Effecto — be sure you get the *genuine, original* Effecto Auto Finishes — there are disappointing substitutes on the market.

Send for Color Card and Name of Local Dealer

Effecto is sold by paint, hardware and accessory dealers everywhere. If you have any trouble getting the *genuine* Effecto Auto Enamel write us at once. We will see that you are supplied.

Pratt & Lambert, Inc., 169 Tonawanda St., Buffalo, N. Y. Canadian address: 115 Courtwright Street, Bridgeburg, Ontario.

MADE BY THE MAKERS OF PRATT & LAMBERT VARNISHES

INSYDE TYRES

—genuine inner armor for auto tires. Double mileage; prevent punctures and blowouts. Agents wanted. American Accessories Co. Dept. 116 Cincinnati, Ohio

30 DAYS' FREE TRIAL

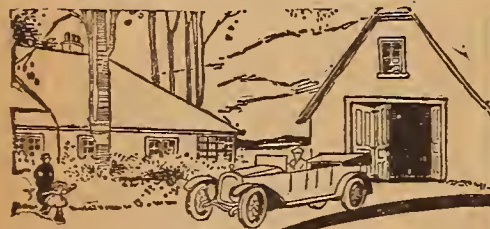
and freight prepaid on any "RANGER" bicycle. Write at once for our big catalog and special offers. Select from 44 styles, colors and sizes in the "RANGER" line.

EASY PAYMENTS if desired, at a small advance over our Regular Factory-to-Rider cash prices. You cannot afford to buy without getting our latest propositions and Factory-to-Rider prices.

Boys, be a "Rider Agent" and make big money taking orders for bicycles and supplies. Get our liberal terms on a sample to introduce the new "RANGER."

Tires, equipment, sundries and everything in the bicycle line at half usual prices. Write today.

MEAD CYCLE COMPANY Dept. G-83, Chicago



Ranger Electric Lighted Motorbike

Learn Auto and Tractor Business

in 6 to 8 Weeks — Earn \$150 to \$400 a Month. The Rahe Practical Method gives best and quickest training. Big demand for our graduates everywhere because of greater ability. The success of 22,000 graduates proves superiority of our practical training methods.

Rahe Auto & Tractor School
World's Oldest and Greatest

Twice more equipment and twice more floor space used in daily training than any auto school in America. Every man 16 years and older can learn here. Plenty of room for individual practical instruction.

WRITE TODAY Free 68-page book. Special Tuition rate and proof from graduates, on request. RAHE AUTO & TRACTOR SCHOOL Department 2264 KANSAS CITY, MO.

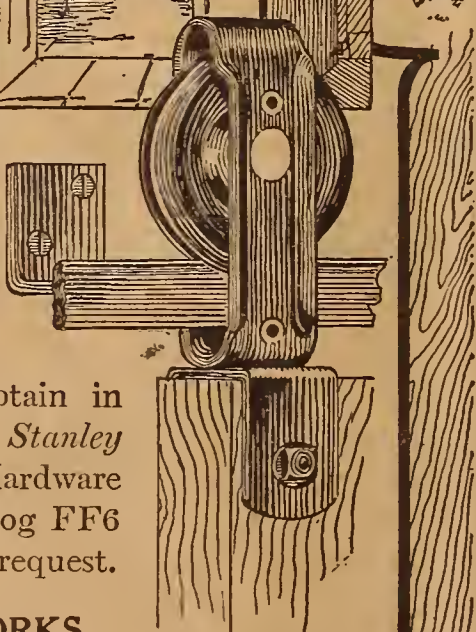


Stanley Works
Garage Hardware
for Rolling Doors

SET No. 2510 here pictured combines practically all the good features possible to obtain in Rolling Door Hardware. Stanley Works Garage and Barn Hardware is fully explained in catalog FF6 — copy will be mailed on request.

THE STANLEY WORKS

New Britain, Conn.
New York Chicago



Ball Bearing Hanger
No. 2525

How to Advertise Your Farm

[CONTINUED FROM PAGE 12]

who come, but those who do come trade quickly and go away satisfied. They learn to watch for my offerings, and send their friends to buy from me.

Here's one thing you want to get clearly in mind: The ad will find the buyers, but your prices, quality and service must satisfy or they won't become regular customers.

You can't build a profitable business without regular customers.

Staple products, which the average family will use in sufficient quantity to justify a trip to your farm, can be profitably advertised in your local papers, as for sale at the farm.

Specialties that interest only a few people in each neighborhood, or which are

bought in small quantities, should be advertised in papers of wide circulation, for shipment by parcel post, express, or freight, unless local dealers handle them.

Last year I made a "bust" on my Ancona hatching-egg advertising. I priced the eggs at \$2 for 15. The Ancona was a new breed around my territory. The series of ads I put in the local papers cost me \$35, and sold \$39 worth of eggs. The same amount spent in a paper like FARM AND FIRESIDE would probably have brought all the orders I could have filled.

Your local paper will probably find plenty of customers for your seed corn at seed-corn prices. Advertise your purebred stock and hatching eggs in the farm papers of wide circulation. Let the city newspapers scare up orders for your hams, bacon, eggs, and butter.

Talk natural-like in your ads and letters.

Don't get fresh. Everybody likes a little dignified humor, but it's dangerous stuff to handle. It is out of place entirely in your advertising, unless it illustrates a point you want to make. Don't waste your money on handbills, program space, and irregular publications. They have no established following or character. Your ads are helped

by the reputation and character of the paper in which they appear.

The more regularly you can advertise the better your ads will pull. I try to have something in the local papers about Orchard Home every week of the year. Don't let your copy get stale and out of date. Change it every issue, if possible. Say something. Prove it. Don't make wild, unsupported assertions. Try to make your ads newsy and interesting.

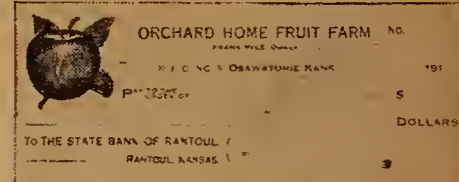
It took a long time to build up your purebred herd to the point where you were

Raspberries Cheap

Famous Kansas Raspberry Plants. Big rooted, certified healthy and hardy. Grow anywhere. Fresh dug plants shipped immediately; 1,000 plants, \$8; 500 plants, \$5; f. o. b. Osawatimie; 100 plants by prepaid post, \$1.50.

FRANK PYLE, Osawatimie, Kansas.

This small ad in a farm paper of wide circulation brought more orders than twenty times the space in ten local papers, because only a few people in each neighborhood could be interested in putting out a berry patch



The banks make no charge for supplying me special checks like these

Thousands of people who are interested in Anconas would have been reached where my local-paper ads reached dozens who had never considered the breed.

My apple-juice ads in the local papers did not pay until I placed the juice on sale with the local dealers. A small ad in the "Kansas City Star" brought enough orders to make it profitable from the jump. So, you see, you'll have to study out who might possibly want your produce and what paper people of that class will read. So again I say, study your market.

proud of it. It will take equally as long for you to get the best results from your advertising. Every advertisement you put out will assist all those that follow it to get better returns—provided you make good, with quality and service, all your printed and written promises.

One time I asked one of the horticultural specialists from the Kansas Agricultural College, "when is the best time to prune?" He answered, "Whenever your knife is sharp and you have the enthusiasm." It's the same way about beginning advertising.

A Mower is More Than a Machine—It's an Investment

By R. B. Rushing of Illinois

LIKE any other machine, there is a right and a wrong way to run mowers.

Nearly everyone who runs a mower, and does not fully understand its operation, thinks the team must go at a lively gait to make it work properly. Any of the light-draft, improved machines now made will do all that is expected of them with the team going at an ordinary plow-team speed, and with a pair of horses weighing from 1,000 to 1,100 pounds each there should be no particular strain on them to carry this machine through any hay or grain field.

The mower should be kept lined up so there is no side draft. This can easily be done by means of tightening nuts found on the machine for this purpose. All slack caused from wear or loose nuts should be taken up each day, or whenever it is noticed. No difficulty should be experienced in finding out when any part needs attention after the operator has run his mower a short while.

Have the knives always sharp, and see that the sections are kept at the right bevel when grinding. Remove any broken or badly gapped sections. Keep guards in perfect line, and be sure, before removing and replacing, that the guard plates are not worn or too much rounded.

See that both ends of the pitman have no unnecessary motion, and that all bushings are adjusted properly to take up any wear. Renew the small bevel-gear cogs as they become worn. There is no economy in running any machine with parts worn enough to cause loss of motion.

It is not necessary to have a blacksmith or machinist do this repair work, for any man with ordinary judgment can replace worn parts. There should be no trouble in ordering them from your home dealer, for each is plainly numbered.

When all parts are in place and you feel ready for the season's business, get your oil can and thoroughly go over the machine. Oil frequently with a good quantity of oil. Lubricants are much cheaper than new mowers, and unless you use plenty of oil you soon need a new machine.

Often a man will buy a machine with too much blade for his use. The long blades will do about orchard trees and in light grass, but when you come to mow coarser hays or cane and other coarse growths, you need shorter blades. Much of the land here in southern Illinois is full of stumps, rocks, or gullies, and the long-bladed machine is soon racked. Of course, on large, level tracts the long blade is all right.

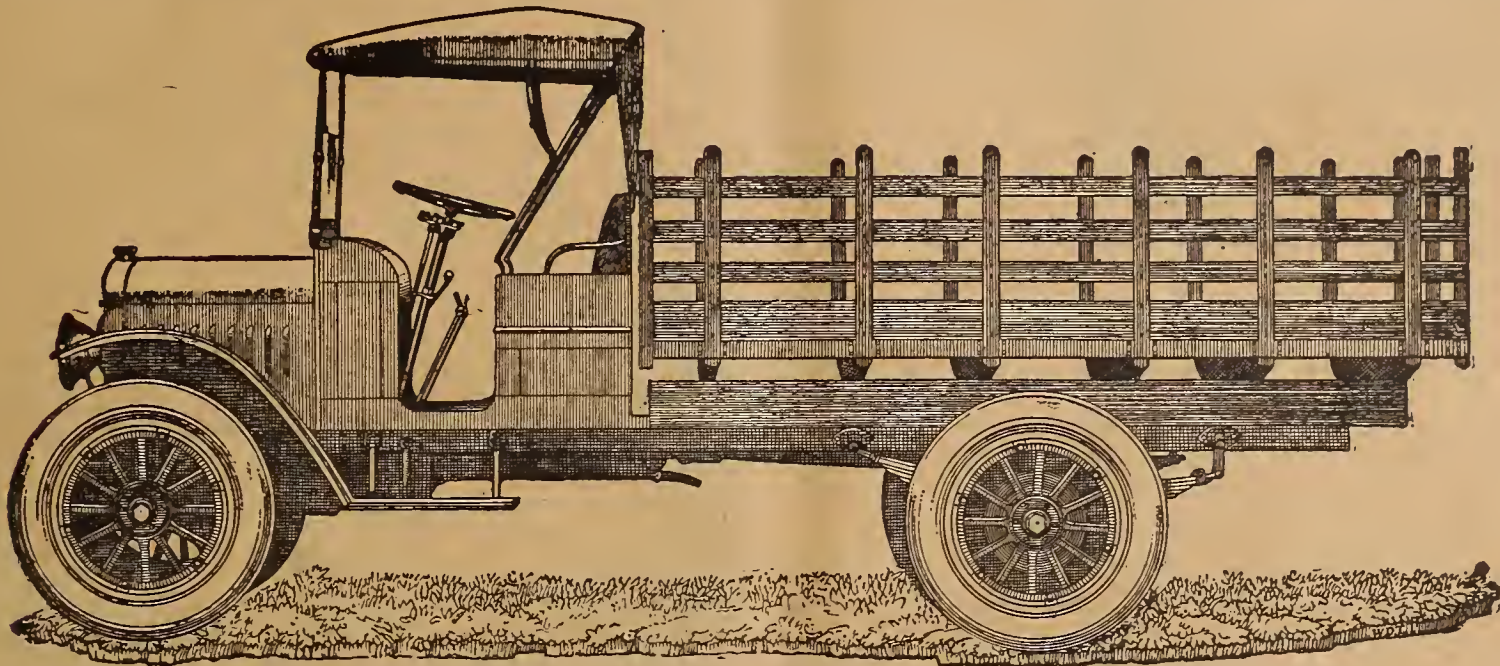
No machine on the farm, in my judgment, can be made more useful than the mower. Not merely as something to cut hay, but as a weed destroyer. A man with a good team, a short-bladed machine can get around in the waste corners and kill more weeds and briars in one day than he could in a whole summer long with hoes, briar hooks, and such tools.

Mowers can be used on head lands, pastures where coarser growth takes them and numerous other little odds and ends can be trimmed with them at less expense and labor than with anything else I know of



More miles per gallon
More miles on tires

MAXWELL 1½ TON TRUCK



**A transportation investment
which will pay the careful
owner 100% dividend at the
end of the first twelve months.**

ABBREVIATED SPECIFICATIONS

ENGINE—Four cylinders cast en bloc with Hot Spot and Ram's-horn intake manifold; cone clutch running in oil; transmission bolted to engine; bore, 3⅝ inches; stroke, 4½ inches.

GASOLINE SUPPLY—Capacity 10½ gallons; positive feed.

TRANSMISSION—Three-speed selective type.

STEERING—Left side drive; 18-inch steering wheel; irreversible worm steering gear, adjustable.

CONTROL—Gear shift lever in center of driving compartment and operated at right of driver; spark and throttle controls operated on quadrant underneath steering wheel; also foot accelerator.

WHEELBASE—124 inches.

TIRES—35 inches by 5 inches pneumatic cord.

REAR AXLES—Worm drive; semi-floating type; extra heavy malleable iron housing.

FRONT AXLE—Heavy drop-forged steel I-beam.

SPRINGS—Front, 38 inches long, 2¼ inches wide; rear, 52 inches long, 2¼ inches wide; both semi-elliptic.

FRAME—Pressed steel construction.

MATERIALS—All steel used throughout Maxwell trucks is made from our own formulae, as specified by our chief metallurgist.

CHASSIS EQUIPMENT—Electric generator, storage battery, electric head and tail lamps, electric horn, complete set of tools, including jack and tire pump with pneumatic tires; seat and front fenders.

Standard Warranty

MAXWELL MOTOR CO., INC., DETROIT, MICHIGAN



America—a Westclox alarm

THE *America* paved the way for Big Ben's success. Thirty-four years ago it was the only Westclox alarm. It entered the field as the unknown product of an unknown maker and pushed to the front on sheer merit.

Bringing out other Westclox did not dim its success. *America* still tops the sales record.

Trim, alert, honest, this clock laid down a policy which has stood the test of time. A policy all Westclox follow—quality.

We are proud of *America* and of the construction principle that *America* pioneered which stands back of Westclox success: needle-fine pivots of polished steel that reduce friction. *Westclox*, on the dial and tag is the mark of a faithful timekeeper.

Western Clock Co.—makers of Westclox
La Salle and Peru, Ill., U. S. A.



This Darling Doll Wants a Mother Will YOU take care of her?

We have bought a large number of these beautiful dolls, knowing our little FARM AND FIRESIDE friends would take great joy and pride in owning them. They are awfully lonesome out here and are just longing for some little girls to act as their mothers and take them into good homes. The doll shown in the illustration is much bigger than she looks there. She stands 16 inches high. She has wonderful blond hair and wears the cutest little dress you ever saw. She minds well too—will sit down or stand up, just as you tell her. You can have her if you will obtain from your friends and neighbors only 6 one-year subscriptions to FARM AND FIRESIDE at 50 cents each. Send the money you collect to us and we'll mail her at once. Please mention Reward No. 1028.

Address FARM and FIRESIDE, Springfield, Ohio

Send NO Money

U. S. ARMY
Dress Shoe
Munson
Last.
Waterproof.
6 Months'
Guaran-
tee.



Tan only
\$6.49
Postpaid

ACT NOW—National Mail Order Company, Box 2567,
Dept. FF-1, Boston, Mass. Send _____ pairs on ap-
proval. If not satisfactory, I am to have my money back.
Name _____ Size _____
Address _____

BE AN EXPERT

Auto and Tractor Mechanic

Earn \$100 to \$400 a Month

Young man, are you mechanically inclined? Come to the Sweeney School. Learn to be an expert. I teach with tools not books. Do the work yourself, that's the secret of the SWEENEY SYSTEM of practical training by which 5,000 soldiers were trained for U. S. Government and over 20,000 expert mechanics. Learn in a few weeks; no previous experience necessary.

FREE Write today for illustrated free catalog showing hundreds of pictures men working in new Million Dollar Trade School.

LEARN A TRADE

Sweeney
SCHOOL OF AUTO-TRACTOR-AVIATION
11 SWEENEY BLDG. KANSAS CITY, MO.

A Picnic for the Glorious Fourth

By Emily Rose Burt

AJOLLY bunch of school girls and boys received the following invitations from their teacher just before school closed; the rhyme was written on the inside of a folder made tall, Uncle-Sam-hat-shape, and the outside was of bright, shiny red with a band of blue and white:

Your Old Uncle Sam
Says put on your tam
And off to the fields and away.

For the Fourth of July,
If you'll only just try,
Is a glorious picnicking day.

Kindly come to the square,
A bus will be there
At the hour of eleven—let's say!

At the appointed time and place the young folks gathered and found a festively trimmed motor truck in waiting, with seats enough put in to hold everybody. The outlines of the truck were hidden under red, white, and blue frillings, and there were myriads of baby-ribbon-like paper streamers. Apparently, the driver was

place—all the candidates with their respective supporters lined up in single file and at a signal set out for a specified goal, a red, white, and blue ribbon drawn between two trees. Each runner, as he or she returned, touched the hand of the next in line, and that one started to run, and so on until all had run. Of course the team finishing first was acclaimed the winning one, and loud were the cheers for the elected President.

The members of the triumphant team were awarded tiny chains, slung on ribbons, to wear around the neck as tokens of gaining the Presidential chair.

After this exciting contest everyone was more than ready for lunch, served at the little tables under the umbrellas. Most welcome of all were the tall tinkling glasses of red currant shrub, to be imbibed thirstily through straws gloriously be-ribboned in blue and white.

There were individual lunch boxes of white cardboard, each manned by a coy kewpie in a patriotic petty of round-and-round stripes. Inside the boxes were por-



Loud were the cheers for the winning President

Uncle Sam himself, judging from the beard and costume; but he drove remarkably well for a bearded old gentleman.

In the course of an hour the party arrived at an open space in a stretch of woodland, where they were thrilled to see a host of red, white, and blue umbrellas springing up mushroom-like. Upon closer inspection a table was seen to be sheltered under each canopy.

"Uncle Sams," cut out of crêpe paper and mounted on cardboard, indicated where the various places were to be. But first before the eats—just to sharpen up appetites a bit—there was a "Presidential race."

Placards bearing six likely candidates' names were handed face down to six different persons. Upon turning over the cards they read the names of those who were supposed to be running for office; they hung the labels about their necks, and each proceeded to choose, in turn, members for his or her team.

There was much good-natured joking as one after another would be picked by Hoover, Wood, Johnson, Bryan, McAdoo, and Cox.

In a cleared space the relay race took

tions of cold chicken tied up in waxed paper, potato chips in waxed paper bags, sealed with wee bits of Uncle Sam pasters, sandwiches, some of them filled with the national nut (peanut), paper containers frilled in blue and filled with beet and cream cheese salad, and strawberry tarts.

Presently cunning Uncle Sam hats, heaped with raspberry sherbet, appeared in company with torpedo-shaped cakelets and red and white candy sticks.

The crowning feature was a tray of snapping mottoes with patriotic headgear inside. The girls' proved to be Miss Columbia Liberty caps, and the boys' were overseas chapeaux.

The crowd was just of an age to enjoy scouring the surrounding country when the hostess-teacher reminded them that cows were often seen in the region, and if they searched they might find horns. The tooting on these, when duly discovered, seemed satisfyingly enthusiastic, and lasted all the merry way home.

NOTE: Three other games to use at such a picnic will be sent on receipt of a stamped self-addressed envelope. Address Entertainment Editor, FARM AND FIRESIDE, 381 Fourth Avenue, New York City.

A "Can-a-Day" Canner

AHOME-MADE device that saves in more than one way is my "wee" canner. As my family is small, I often have enough vegetables or fruit to fill one jar, besides what I need for the immediate meal.

By using material at hand we made a canner to hold a quart or pint jar. I often fill a jar with the surplus, and boil it while getting a meal, thus adding to the store of good things to eat, and saving fuel and products that otherwise might go to waste.

For the container I use a gallon syrup pail, with wire rack that fits inside the pail. The rack is made of two pieces of baling wire, 22 inches long. They are crossed at center of each, and securely tied with picture wire. Any kind of fine, pliable wire will do to tie with. The wires are bent upward at right angles, two inches from center; the ends are bent back at top, to make ears to lift by. Two circular wires

are fastened to the upright wires with the picture wire, two inches from top and bottom.

When I have more fruit or vegetables than required for a meal, I fill a jar, adjust rubber and lid, place in a rack, then in pail filled with cold water to neck of jar, boil the required minutes, and seal.

Often I cook a large pumpkin or squash which I do not wish to use all at once. It is only a few minutes' work to fill a jar and process it, and I have pie filling ready for any emergency.

In winter I have preserved fresh meat for future use, a can or two at a time, with the same little outfit. The meat must be cooked tender, put in sterilized jar, covered with its own broth, and boiled an hour three consecutive days. It can be boiled for three hours at one time, but I think the former method is the safer one.

Mrs. M. W. W., Missouri.



A Wonderful Improvement

Imagine how easily you can clean this mop! Swab pulls off frame like a curtain from a rod. Wash it, wring it, dry it, and slip it back on the frame. When swab wears out a new one may be obtained at a moderate cost.

LIQUID VENEER MOP

You will never know what a *real* mop is until you try this wonderful mop with its 5 great, new features.

The results it imparts are simply marvelous—floors so spotlessly clean, free from grease, lustrous and beautiful, they look *just like new*, due to the famous Liquid Veneer treatment.

Try this big, fluffy mop. \$1.50, worth double. At all dealers. Sold on approval.

Buffalo Specialty Co.
311 Ellicott St., Buffalo, N. Y.

Note:—Have you tried Liquid Veneer? If not, send for liberal trial bottle and story of the \$150,000 World Champion Cow, all free.

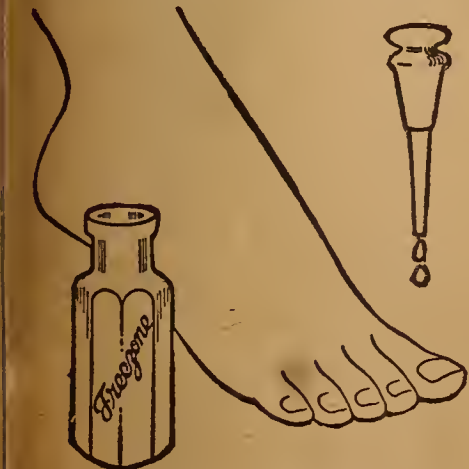


MENDETS—WONDER MONEY MAKERS

mend leaks instantly in all utensils, hot water bags, etc. Insert and tighten. 10c and 25c a package, postpaid. Agents Wanted. Collette Mfg. Co., Box 704, Amsterdam, N. Y.

Lift off Corns with Fingers

Doesn't hurt a bit and "Freezone" costs only a few cents.



You can lift off any hard corn, soft corn, or corn between the toes, and the hard skin calluses from bottom of feet.

Apply a few drops of "Freezone" upon the corn or callus. Instantly it stops hurting, then shortly you lift that bothersome corn or callus right off, root and all, without one bit of pain or soreness. Truly! No humbug!

Tiny bottle of "Freezone" costs few cents at any drug store

How I Get Rid of Flies

WHENEVER I drive a fly from the house it perches itself on the screen waiting for the first chance to come in again; or, worse, it hunts some breeding place, and as a result a thousand flies are soon swarming about my or someone else's door.

To prevent this, I pronounce a sentence of death on every fly that enters my house. I use all the methods I know of in executing the sentence. I find the swatter most effective for getting rid of the occasional fly. When flies come in in large numbers, as in damp weather or when there are a number of persons opening the doors, I have a method that is effective.

First, I darken all of the house but the kitchen, and soon most of the flies are in the kitchen. Then I close the kitchen doors and windows and pull down the blinds, and sprinkle a generous amount of pyrethrum powder wherever the flies are likely to light—mostly in the windows and on any white objects in the room. I leave the room closed tight for an hour or two. Then I open it, and sweep up the flies and burn them.

The pyrethrum powder does not kill the flies, but stupefies them, and they drop wherever they come in contact with the powder, and seem as dead until they are revived by fresh air. The powder is not harmful to a person entering the room where it is sprinkled.

Mrs. H. D. T., Colorado.

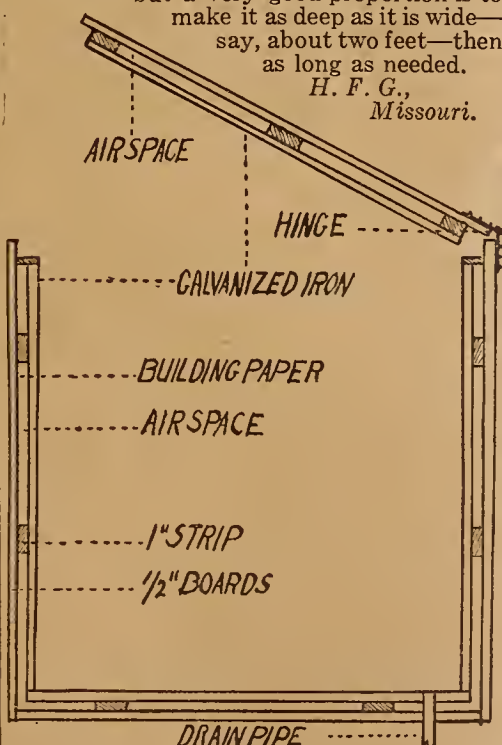
A Home-Made Icebox

AN ICEBOX that will answer all the requirements of a high-priced refrigerator may be made by anyone with a slight knowledge of carpentry. The box as illustrated herewith consists essentially of two boxes, one within the other, separated by one-inch strips so as to form a dead-air space between the two. This is much more sanitary than the use of sawdust for packing.

Heavy building paper is tacked to the inside of the outer box as well as the outside of the inner one before they are put together. The inside box is lined with galvanized iron, and a piece of half-inch pipe is soldered on at the bottom to provide drainage. An inch strip, two inches wide, is nailed over the opening between the two boxes at the top in order to insure dead air space. A strip of felt around the edge of the lid will insure closer contact when closed.

The box may be made any size desired, but a very good proportion is to make it as deep as it is wide—say, about two feet—then as long as needed.

H. F. G.,
Missouri.



Two Little Helps

THE QUNCE OF PREVENTION—It is a very good plan before preparing vegetables or fruits that stain the fingers to rub the thumb and forefinger with a little grease. That will prevent the unsightly stains which are difficult to remove.

V. P. T., Massachusetts.

IN PLACE OF CREAM—I use milk in place of cream for my cocoa, and just before removing from the fire beat vigorously with an egg beater. The effect is almost the same as if whipped cream were used.

L. G. C., Massachusetts.

With the Victrola and Victor Records you hear the greatest artists just as they wish to be heard

Your interpretation of a piece of music may be in itself a highly artistic achievement, but not if superimposed on the interpretation of a master. It then would be neither one thing nor the other.

The Victrola is equipped with doors so that the volume of tone may be regulated to suit varying conditions. They are not intended to be used in imposing amateur "interpretations" upon those of the world's greatest artists, for that would be to lose the very thing you seek—the finest known interpretations of music.

A Victor Record of Caruso is Caruso himself—provided always that some less qualified person shall not tamper with what the artist himself has done.

Victrolas \$25 to \$1500. Victor dealers everywhere. Write to us for catalogs and name of nearest dealer.



VICTROLA

REG. U. S. PAT. OFF.

is a trademarked word which identifies products manufactured by the

Victor Talking Machine Company

Camden, New Jersey

PUBLIC SALE U. S. Army and Navy Goods

For Camp and Summer Outfits

Ask for big catalog 108 today

Army Shirts	\$2.50
Army Mess Plates	.25
Army Breeches	2.50
Army Blankets	6.00
Army Gots	4.50
Army Ponchos	1.00
Army Shoes	8.00
Army Knapsacks	1.50
Tents	3.50

and all other articles for camp or outdoor use

SEND 10c FOR ARMY & NAVY CATALOG—108—AND BUY AT AUCTION BARGAIN PRICES

ARMY & NAVY STORE CO.
245 West 42d St., New York

Largest Camp and Military Outfitters.



You can be quickly cured, if you

STAMMER

Send 10 cents coin or stamps for 70-page book on Stammering and Stuttering, "Its Cause and Cure." It tells how I cured myself after stammering for 20 years.

Benjamin N. Bogue, 1358 Bogue Building, Indianapolis

AGENTS



A REAL SUMMER SELLER

Everybody, young and old, every home, church, fair, picnic, etc., is a sure customer for our concentrated soft drink extracts for making

Non-Alcoholic Summer Drinks

Refreshing, healthful. Seven different kinds—Orangeade, Cherry Bounce, Raspberry, etc. Small package—carry it right with you. One bottle makes 32 glasses. Guaranteed pure. Get it while it's new. 100 per cent profit. No competition. No experience needed. Write postal today for special proposition FREE.

American Products Company
2096 American Bldg., Cincinnati, Ohio

SEND NO MONEY

Simply send your size and these famous Boston Beauty Dress Shoes will be sent to you *On Approval*. Trim and neat, they fairly sparkle with style. Built solid full of wear. Genuine oak leather soles. Splendid soft selected leather uppers. Your choice of Dull Black, or Rich Dark Tan. Just the shoes for dress and business. Buyers from all over the country come here to get them for their stores. Buy them direct from us. Enjoy their beautiful style, and save the profits of wholesaler, jobber and middleman. We are so sure of their wonderful value that we'll send your pair on approval—the risk is ours. These must please you or no sale!

GUARANTEE These \$8 to \$10 values must please you perfectly or back goes your money. Buy Direct from the Oldest and Largest House in the Shoe Market of the World. Reference: Any big bank in Boston.

YOUR CHOICE of four styles. Broad Toe, business man's Dress Shoe, in Black or Tan. Newest style, Narrow Toe, in Black or Tan.

Send for a pair at our risk. Note their (1) stunning style; (2) Low Genuine heels; (3) Genuine oak leather soles; (4) Soft selected leather uppers. Mark coupon whether you want Black or Tan. Rich Dark Tan in other style toe, pay postman only \$5.89 on arrival. Dress Dull Black, pay postman only \$4.97 on arrival. We pay the postage. Compare them with the best \$10 shoes you have seen since the war.

Special Sale These special prices good for your immediate orders only—to introduce the sensible way of buying direct from the Shoe Market of the World.

—Rush Sale Coupon— Boston Mail Order House, Dept. 758-T, Boston, Mass. Send Dress Shoes marked on approval. I risk nothing.

☐ Broad Toe, black.....\$4.97
☐ Broad Toe, tan.....\$5.89
☐ Narrow Toe, black.....\$4.97
☐ Narrow Toe, tan.....\$5.89

Name.....Size.....
Address.....



—when "delicious and refreshing" mean the most.

THE COCA-COLA COMPANY
ATLANTA, GA.

221F

Mr. Coon's Strange Adventure

[CONTINUED FROM PAGE 20]

prowled at night, he saw his gold flying through the air, but could not catch it."

"Lightning bugs!" grunted the badger. "Lightning bugs they were," continued the coon, "and the animal found that riches have wings, sure enough, when you don't earn them. It was fit that lightning bugs should appear after a storm which has lightning with it."

"Well, friend Badger, the foolish coon went without any tail until winter arrived. Then he found that it was a hard matter to get along without its friendly warmth."

"One day he sat shivering near a pond when he was surprised to see one of the old women of the far-away woods appear. Said she: "Coon, I have come."

"Have you brought me a tail?" asked the shivering animal, whereupon the old woman bade the coon produce the bits of tail which he bought with a portion of the

For the Buffet

FC-131



COMPLETE directions for this attractive buffet set, consisting of three doilies like the one pictured, will be sent to you on receipt of four cents in stamps by the Fancy-Work Editor, Farm and Fireside, Springfield, Ohio. Order No. FC-131.

\$5,000 Insurance on a Hen

THAT was one of the headlines on a newspaper recently. The man who insured one of his many hens for this large amount must certainly have thought a lot of her. He probably figured that if she died, naturally or by accident, he would suffer a loss of somewhere near \$5000. So he was protecting himself against it.

Now here's a thought that occurred to me. If this man was willing to insure one of his hens for \$5000, how much more willing we should be to insure our business—that of publishing Farm and Fireside—no matter what the cost.

And I thought to myself further—our business is founded on the good will of our thousands of readers, of whom you are one. There is not an insurance company in the wide world that will protect friendship. That is something we must do for ourselves by giving you and our other readers every month, a Farm and Fireside which will help you toward success—which will always contribute something to your comfort, entertainment, and happiness.

—And that is our insurance. We want to do our best for you. We want you to be our friend. For I know, and you know, that in the end, our honesty and sincerity of purpose will be the measure of our success.

David Blair
Manager Subscribers' Bureau

FARM & FIRESIDE
The National Farm Magazine



A cool kitchen

Simply turn a valve and cook

30 Days Trial

The Oliver Oil-Gas Burner is an attachment that makes any cooking or heating stove a gas stove. No coal or wood. Cooks and bakes better than coal or wood in the same stove.

Makes Its Own Gas from coal oil (kerosene) at one-fourth the cost of city gas. Everybody knows gas means cleaner, cheaper, quicker cooking, and a cooler kitchen. No fires to start, no ashes, no chopping, shoveling, poking and dragging of coal. Saves hours of work and loads of dirt. No smoke nor odor. You regulate heat with valves. Simple, safe, easily put in or taken out. Simply sets on grate. No damage to stove. Lasts a lifetime. Thousands of users. In use 10 years.

SAVES MONEY--FITS ANY STOVE

16 different models, one for every stove. Write for free literature—tells how two gallons kerosene equals more than ninety-seven pounds of coal.

Oliver Oil-Gas Burner & Machine Co.,
2003 Pine St., St. Louis, Mo.
Western Shipments From San Francisco.

AGENTS MAKE BIG MONEY. Write for Agency.

Clear Out Rats in 3 Nights

"Rough on Rats" rids your premises of all rats and mice in 3 nights. Change the bait you mix with "Rough on Rats"—that's the secret. Rats won't eat the same food that they know killed others. Varying the bait fools them. Druggists and general stores sell "Rough on Rats"—the most economical, surest exterminator. Write for "Ending Rats and Mice." Mailed free to you.

E. S. WELLS, Chemist, Jersey City, N. J.



ROUGH ON RATS

TELL TOMORROW'S Weather

White's Weather Prophet forecasts the weather 5 to 24 hours in advance. Not a toy but a scientifically constructed instrument working automatically. Handsome, reliable and everlasting.

An Ideal Present

Made doubly interesting by the little figures of the Peasant and his good wife, who come in and out to tell you what the weather will be. Size 6 1/2 x 7 1/2; fully guaranteed. Postpaid to any address in U. S. or Canada on receipt of \$1.25.

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Agents Wanted
DAVID WHITE, Dept. 15, 419 E. Water St., Milwaukee, Wis.



Stifel's Indigo Cloth

Standard for over 75 years

For Men's Overalls, Jumpers, Uniforms

Miss Stifel Indigo Cloth—for women's overalls and work clothes. The strongest, fast color, work-garment cloth made.

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Wheeling, W. Va. 260 Church St., N.Y.

Garments made of Stifel Indigo sold by dealers everywhere. We are Manufacturers of the cloth only.

contents of the pot; and when he brought these she led him to the pool.

"Stick your stub of a tail into the water," she commanded, and Mr. Coon did as he was told, although the water was fearfully cold. The old woman placed one bit of the tail on the stub, and immediately ice formed on the surface of the pool and froze the bit on.

"Whew, this is cold work!" Mr. Coon chattered.

"Think of how hot your friends made it for you all summer and fall, you selfish animal!" the old woman growled.

"Well, when the piece of tail was frozen on, the coon was told to pull himself loose, which he did after hard work. Where the ice formed and fastened the piece on, there was a white circle. The old woman then put in place another section of the tail, and this was frozen on as was the first, and so on, until the coon had his tail back; but instead of a tail of one color that he formerly had he was ring-tailed."

And sitting at the pond with his tail in the water he was observed by many of his kind who inquired what he did there.

"I," was the answer, "got something more valuable than a pot of gold."

"And would you believe it, every coon in the country went to the pond, stuck his or her tail in the water, and waited for the 'something' to come to them. The result was, every tail was frozen like the other's. As each found himself frozen in the ice, he turned pale with fear, and upon being told of the old woman of the woods who exacted a bit of the coon's tail, each feared that he might be mistaken for the coon who paled in the woods when after the pot of gold at the rainbow's end. So the result was that each coon daubed his face with mud. This custom grew, so that to-day we never see a coon with a pale face. That, friend Badger, is the story," Mr. Coon concluded, stretching himself and switching his tail.

"And the storm's over!" Mr. Badger cried, snooping at the opening to the hole. "I guess, however, my friend, neither of us will run after the rainbow's end, eh?"

"None of that for me!" Mr. Coon muttered, going his way.

"We are advertised
by our loving friends"

Typical Mellin's Food Babies



Bernice A. Johnson
Glenn W. Johnson
Centralia, Ills.

If your baby is not doing as well as you hoped he would, use the Mellin's Food Method of Milk Modification.

Send today for a trial size bottle of Mellin's Food, together with our book, "The Care and Feeding of Infants."

Mellin's Food Company
Boston, Mass.



Making Farm Life Worth While

"IT IS especially important that farmers should have water systems, heating systems, and lighting systems in their homes, and adequate rural institutions for providing a satisfactory social life, in order that they may be content to remain permanently in the country." According to H. C. Taylor, chief of the Office of Farm Management of the U. S. Department of Agriculture.

"The savings of a lifetime on the farm should not be expended upon building city homes instead of building country homes, and that as soon as people have secured a competence, and are in position to have the leisure which would enable them to take an active part in developing an adequate country life, they should not abandon the country and go to the city, thus impoverishing country life."

What You Can Do for the Farm Bureau

(CONTINUED FROM PAGE 5)

marketing, and distribution are susceptible to revision, but established and organized business defends its prerogatives. The problems for us to solve are such that much time and patience will be required.

It is imperative, not alone from the farmer's standpoint, but from the nation's, that a definite national policy regarding agriculture be worked out. It is more important as a matter of national defense than our national naval or military program. The slogan "Food will win the war" is yet in our ears, and should not be lost sight of in the long look ahead. But food is essential not only in war. More of us demand certain definite portions in times of peace. Are we as a nation going to adopt a policy that will insure our food supply for all time to come from our own farms? Or are we going to depend on resources from other lands? If the latter, then must we not at once adopt plans looking to the control of every ocean highway?

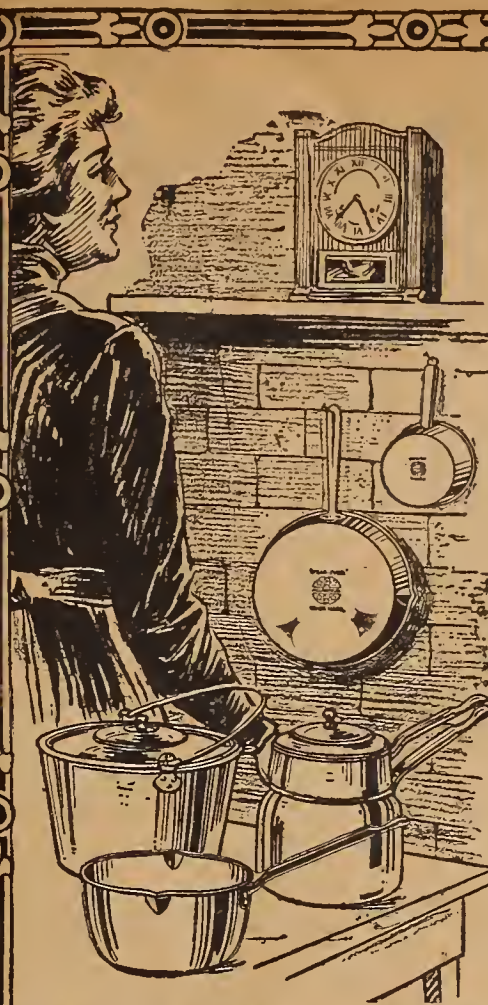
These are a few of the many things confronting us. The American Farm Bureau Federation will not, cannot, solve them. It is merely the agency through which you, the individual farmer, can have your part with thousands of other farmers in their solution, through your local organization.

ONE of the provisions of the federation constitution is for referendum of farmers' opinions on public questions. Already the first one has been submitted, and replies are coming in. Groups of men in their local units have discussed the effect on a new taxation proposal on land values, interests, rentals, production, and their replies are coming in to form groundwork for future decision. Other referendums will soon be sent out on other questions. It means that you, the individual farmer, must think clearly and definitely upon these things. And you must think in latitudes of national scope, for in these days every man's interests affect every other man's.

What can you, the individual farmer, do for your state federation or the American Farm Bureau Federation? You collectively are the federation. Your local unit of county or township is the foundation upon which the larger structures must stand. The strength of the whole movement depends upon the strength of the local organizations.

I want to urge that every farm bureau member give first consideration to the building up of the county farm bureau and upholding the work of the county agent. Make his work vital to yourself, and so help to direct it that it will be necessary in your community and worthy of the confidence and respect not only of farmers but of the city people as well.

The strength of the nation is measured by the strength of its average citizen. The strength of the federated movement is not greater than its component parts. I want to appeal to the farmers of America to look carefully to the local farm bureau. Give it your best thought and assistance. Make your own farm community the best in the county, and your county the best in your State.



Shorten and Brighten the Hours

of the housewife who is doing her part, gladly, to make farming pay.

It is only right, isn't it, that her work, like that of the men in the field, be made just as easy and pleasant as possible?



"Wear-Ever"



Aluminum Cooking Utensils

—the clean, bright, light, silver-like utensils—will give her real convenience in cooking—the right utensils for every need. Besides, they save time and fuel, because aluminum takes the heat quickly and holds it. "Wear-Ever" utensils have no joints or seams; cannot crack, flake or peel; are pure and safe.

Replace utensils that wear out with utensils that "Wear-Ever"

Look for the "Wear-Ever" trade mark on the bottom of each utensil

The Aluminum Cooking Utensil Co. New Kensington, Pa.
In Canada, "Wear-Ever" utensils are made by Northern Aluminum Co., Limited, Toronto, Ont.

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We want one exclusive representative in each locality to use and sell the new Mellinger Extra-Ply, hand made tires. Guarantee Bond for 8000 Miles. (No seconds.) Shipped prepaid on approval. Sample sections furnished. Don't buy until you get our Special Direct Prices. Write MELLINGER TIRE & RUBBER CO. 903 Oak St. Kansas City, Mo.

Cash In

That is the motto of the Cash-In Club—to make money in spare time. And you'd be surprised how much the members do earn.

The work is so pleasant, too, and the possibilities for earning money limited only to the time members can devote.

We want new members. So if you'd care to join (no fees) and capitalize your spare time, send a card to *Cash-In Club, Farm and Fireside, Springfield, Ohio.*

AGENTS: \$54 a Week



All Styles and Sizes

Brand New Proposition

THOMAS SHOE CO., 1146 Long St., Dayton, Ohio

taking orders for Thomas Guaranteed Shoes, for men, women and children. All styles. Heel cannot come off. Flexible steel arch shank.

Must wear and give satisfaction or replaced free.

Get started at once.

A profitable business for men and women. No capital required. Write for samples.

It is to your interest to mention Farm and Fireside in answering advertisements.

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FREIGHT CHARGES PAID

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Century Roll Roofing lays better, lasts longer and costless. Made from best long-fiber felt saturated with our own secret formula. Fully guaranteed to defy sun, snow, ice, wind and weather. Anyone can lay it. Does not buckle, rot, crack, tear out or frazzle.

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WRITE FOR SAMPLE

Let us send you free samples, big bargain catalog and money saving pricelist. Don't spend a dollar for roofing until you get them. Write TODAY. Let us prove we save you big money.

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SAMPLES & BARGAIN BOOK

LANDSEEKERS

Big opportunity in Michigan. Hardwood land \$15 to \$35 per acre. 10 to 160 A. Small down payments; easy terms on balance. Big money in grains, stock, poultry or fruit. Big illustrated booklet free on request. Swigart Land Co., Y1250 First Nat'l Bk. Bldg., Chicago, Ill.

NEW YORK STATE FARMS: Write for complete list of money making farms for sale. We have a size, location and price to please you. Stock and tools included on many of them.

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School of Nursing OF UNIVERSITY OF COLORADO, BOULDER, COLO.

Theoretical and practical teaching is offered which will fit a young woman to fill the numerous positions open to graduate nurses. Write for circular.

Send NO Money!

The Comfort, Quality and Style of this Beautiful Oxford makes it the most wonderful Dress Shoe Value ever offered. Your choice of black or tan, in either Military low or French high heels. Direct to You from the Shoe Style Center of America. Send for a pair ON APPROVAL. Simply mail coupon. Compare these with shoes sold elsewhere at \$8.00 to \$10.00 a pair. Try them on in your own home. Enjoy their blessed comfort! Postage FREE.

Send No Money

If you are not delighted with these wonderful shoes, they will not cost you a penny—Send them back at our expense.

You risk Nothing!



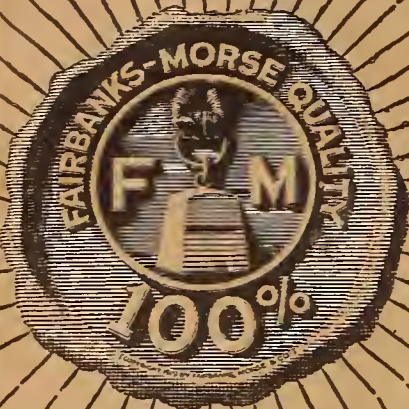
On \$4.85 Arrival

MAIL COUPON TODAY
BOSTON MAIL ORDER HOUSE, Dept. 2018
Essex P. O. Bldg., Boston, Mass.

Send Shoes ON APPROVAL. I will pay only \$4.85 on arrival.
☐ Rich Dark Tan, Low Heel ☐ Rich Dark Tan, High Heel
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Name _____ Size _____
Address _____

Fairbanks-Morse "Z" Farm Engines



Why Over 250,000 Farmers Endorse "Z" Engines

"Z" Engine perfection—nothing else—sold over a quarter of a million American farmers.

Greater power and lower operating expense have established the supremacy of this master engine.

This rare combination of scientific design and construction—efficient operation—right price—successfully answers every farm engine need.

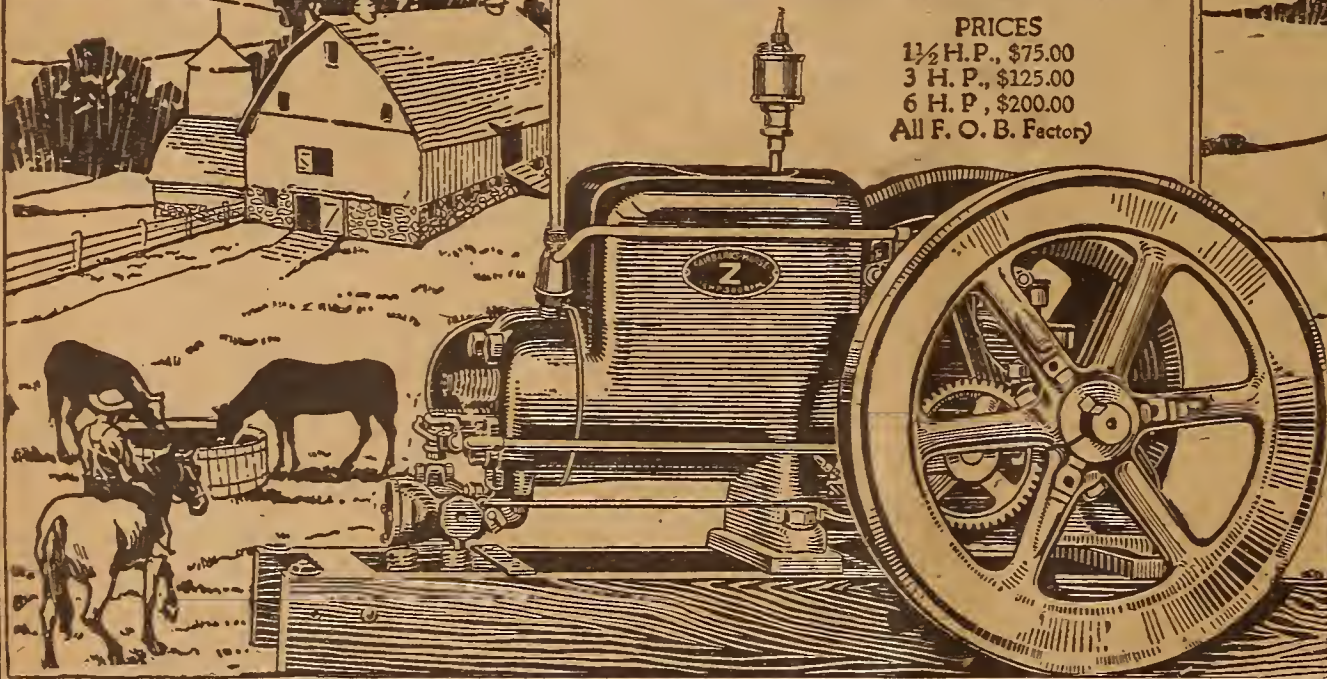
Equipped with Bosch Magneto. Backed by country-wide Fairbanks-Morse dealer service.

Go to your dealer—see the "Z"—find out why it should be a part of your farm equipment.

FAIRBANKS, MORSE & CO.
MANUFACTURERS CHICAGO

The Canadian Fairbanks-Morse Co., Ltd., Montreal

PRICES
1½ H.P., \$75.00
3 H.P., \$125.00
6 H.P., \$200.00
All F. O. B. Factory



Pay Nothing Until 60 Days

Now is the time you need a good, reliable sprayer for fruit trees, vines, shrubbery; for white-washing barns, chicken houses, hog sheds, etc. Here's a sprayer that will do the work thoroughly and quickly and pay for itself in increased profits. Prove it at our risk. Just send coupon—no money—and we will ship sprayer promptly. Use it 30 days free. If you then decide to keep it, make first small payment in 60 days, balance in 60-day payments, giving you nearly a

Full Year to Pay Majestic All-Purpose Sprayer

This hand sprayer is just what you want if you haven't enough work to keep a power sprayer busy. Working parts made of brass. Specially constructed pump with high grade 4-ply rubber tubing. Automatic shut-off nozzle with non-clog spring cap. Light, convenient. Easily taken apart for cleaning. Contents kept continually and thoroughly mixed. Sprays to the last drop.

FREE Book of Farm Necessities
Shows wonderful bargains in gas engines, cream separators, drills, cultivators, saw frames, circular saws, feed cookers, paints, roofing, etc. Write postal for free copy.

SEND coupon today for this sprayer and take nearly a year to pay if you like it. Just the coupon. No money.

THE HARTMAN COMPANY

3900 LaSalle St., Dept. 2878 Chicago

Send Sprayer No. 453AMA40. If satisfactory I will pay \$2.00 in 60 days; balance in 60-day payments of \$2.00 each until price of \$6.95 is paid. Otherwise I will return it in 30 days and you pay transportation both ways.

Name.....

Address.....

A REAL JOB!

Are you satisfied with your present earnings?
Are you able to save any money?

If you are not earning a salary of at least \$50.00 a week and you are energetic, we want to make you a proposition. NOW is the time to enter our organization. Write

SALES MANAGER

Farm and Fireside, Springfield, Ohio



The True Story of Kanred

[CONTINUED FROM PAGE 11]

frequent than in Kansas. In South Dakota and northern Iowa spring wheat is commonly grown because winter wheat too frequently winter-kills. Yet when winter wheat lives over the winter it generally outyields spring wheat in all this territory. The seeding of a more hardy variety should make winter-wheat-growing possible farther north.

It has been known for several years that Kanred wheat is resistant to rusts. Careful tests at the Kansas Experiment Station have shown that it is resistant or immune to certain strains of black stem rust. It has been frequently observed in fields in Kansas that Kanred has not been injured by severe epidemics of red rust when other varieties were not only very severely infected, but actually injured enough to lower the yield considerably. Prof. L. E. Melchers, plant pathologist of the Kansas Experiment Station, who has been studying the rust resistance of Kanred and other varieties of wheat, says:

"THIS variety in the long run will save the farmers of Kansas thousands of dollars because of its resistance to some of the rusts prevalent in this State. Although the black stem rust does not occur as frequently, nor cause as much damage, in Kansas as in some other States, there are seasons when the losses from rust are large. Also its resistance to the red rust is very important since this rust is present in Kansas every year, and the actual injury which it causes on all other commercial varieties has been greatly underestimated."

In parts of Texas rust injured wheat severely last season. Mr. H. A. Talley of Miami, Texas, who has grown Kanred wheat for two years, said:

"This wheat made 16 bushels in 1918, which is the poorest year the country has known, and Kharkov only made nine bushels on the same kind of land. This year, 1919, this wheat made 35 bushels, and the other 15 bushels."

Kansas millers say, "Yes, it may out-yield Turkey, but what about its milling qualities?" This point has not been overlooked. Prof. L. A. Fitz of the Kansas Experiment Station, one of the most practical millers in the United States, in experimental work has milled samples of Kanred in comparison with Turkey and Kharkov from every crop since 1912. He says:

"I am unable to see any difference in the milling value of Kanred and Turkey wheat."

Kanred wheat has been in such demand for seed that there has been none available in Kansas for milling purposes. The only carload of Kanred wheat known to have been sold on the market for milling purposes was grown on the Bradshaw Ranch in Colorado, and sold on the Minneapolis market October 28, 1919. It sold as No. 1 hard winter, no dockage, with test weight of 61.8 pounds.

KANRED is not a variety that should be planted everywhere in the United States. It is distinctly a hard winter wheat, and should not be planted outside the territory where this type of wheat is grown.

In choosing a new variety, be sure that it is adapted to your conditions. There is no such thing as a universal variety of wheat. Any variety that is advertised as adapted to all parts of the United States is a fake. The climate of the country is so variable that several different types of wheat are needed, and perhaps many different varieties, to meet the conditions in all parts of the country.

Kanred is not adapted to the eastern part of the United States, where stiff-strawed, soft winter wheat is grown.

It is not adapted to the Pacific Coast States, where soft club wheat is produced, nor to the North Central States, where spring wheat only can be grown.

It is adapted to the Southern Plains States, including the hard-wheat sections of Kansas, Oklahoma, Texas, Colorado, and Nebraska.

It may prove satisfactory in parts of Illinois, Iowa, and Missouri where Turkey wheat is now grown. It should be tried along the border of the winter and spring wheat growing region where winter-killing is common, and it may outyield Turkey wheat in certain parts of the Northwest.

Opera Singer Buys Farm

MADAME SCHUMANN-HEINK, famous singer, is now an "alfalfa queen." During her recent appearance in Sacramento she closed a deal for 400 acres of alfalfa lands in the Natomas district just north of Sacramento. Her sons, Henry and Ferdinand, had previously purchased 300 acres in the same district, and the family's total holdings are worth approximately \$400,000.

The noted prima donna, following the closing of the deal, announced that she will make her home in this vicinity for at least a portion of the year, that buildings are to be erected and practically all of the 700 acres planted to alfalfa.

"Nowhere have I seen a section affording more evidence of unbounded fertility," she declared in commenting on the deal.

Men 3,000 Years Ago

[CONTINUED FROM PAGE 10]

a few men, and Jesus himself would maybe need to administer to us as terrible rebukes, could he stand in the doorways of our churches and look within and at the life without, so little touched by so-called Christianity, as He administered in the temple where men sold doves and changed money in the name of religion.

The other thought that I wish to leave with you is the essential unchanging of man's nature, man's needs, man's temptations, man's duties. It is still true that he who overcometh and overcometh to the end wins the reward. To-day, as seldom before, is there a laxness of moral fiber creeping into our midst. Men are asking:

"Is it really true that the commandments apply to-day? Is it not more one's duty to provide for his family than it is to obey 'thou shalt not steal'? Why should we labor for six days? What harm is there in doing as we please on the seventh? To commit adultery may be wrong, but supposing one has an affinity? Is not divorce better than differences of opinion, quarrels in the household?"

"What, after all, is the true duty of man? Is it not to get what he can for himself? To get money so that he can wear fine apparel, so that he can give whist parties and ride in automobiles? Is it not a hardship to children to ask them to labor, to get up early, to do without things, to practice self-denial, to go to the church and Sunday school? Has not the old order dropped away? Is it not true that man can as well as not live softly, eat luxuriously, drink if he pleases? Is not the automobile in the garage better than the roof over one's family? Is not the family, after all, rather a nuisance? What harm in stealing if one steals from a corporation or from the Government? What harm in adultery when one is not found out?"

THESE are the questions that men seriously propound to-day. Ah, friends, all this belief is illusion, all the illusive mist that hides the truth, hides the way. That way is yet straight and narrow, it is yet true that the wages of sin is death. All that was ever true in the world is true to-day.

It is yet true that the love of Good—which is the love of God—is the greatest of the commandments. It is yet true that strength comes from labor honestly done, and envy, hatred, malice, uncharitableness are yet hateful. And the home is yet the foundation of society—the one wife, the clustering children, the honest toil that feeds them, the sober, kindly, never-forgotten counsel that helps them on the right way. These now, as ever, are the things that are good in the world, are true in the world, and ever will be. And to-day, as ever, there is curse for every sin; the curse is not so much given as punishment for the sin as it is a part of the sin, a necessary penalty attached to the sin.

Never before in the world, maybe, was there more need of men who can overcome; men who can remain steadfast to ideals, who will stand up straight and resist temptation, who will not steal, and who will set the example so beautifully that others will admire and follow, who will labor and press on, who will refuse to drop out of the race even if their friends dally by the wayside gathering flowers of pleasure.

"To him who overcomes I will give power over the nations. To him who overcomes I will give to eat of the tree of life. Ye are of God, little children, and have overcome them because greater is he that is in you than he that is in the world."

"Truth changeth not." As it was in the beginning, it is now, and ever will be, world without end.



BOYS

BOYS are well-known. You don't have to go to far lands or to the County Fair to look upon them. Wherever there are people, it is still the style to have Boys.

Perhaps you are trying to run one or more Boys right this minute. Then you will know that since the world began they were never so magnificently important as now. Your hopes and your aims center on them. You must deliver them out of Boyhood into successful Manhood.

Will your sons stay with the land, or will the will-o-the-wisp of the cities call them away? Armies of country Boys, who could be happiest and most successful on farms, respond to the artificial glamour of town life before they are old enough to know their own minds. They do not know that the rewards of country life—in money, health, and happiness—are far greater. Make youth realize that!

Guide the restless ambitions of your Boys and spare no pains!

Machines have been a powerful factor in stemming the flow to the cities. Machines banish drudgery and make labor interesting; machines foster the love of mechanics in the Boy; machines make leisure and enjoyment possible and they are builders of fortunes.

Consider the Full Line of International Farm Machines. You own many of them. Perhaps you should own more of them. They are sold by International dealers everywhere. They are the products of many years' honest endeavor and they are always worthy of your confidence. Give your sons every possible opportunity for liking and appreciating farming and farm life. As you bend the twig, so will the tree grow.

INTERNATIONAL HARVESTER COMPANY

OF AMERICA
CHICAGO (INCORPORATED) USA

92 Branch Houses in the United States

We guarantee that every subscriber will receive fair treatment from advertisers. It therefore pays you to mention Farm and Fireside in answering advertisements.

AGENTS WE WILL FURNISH YOU THIS NEW 
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there's an enormous and repeated strain on the nails which hold his shoes. To get a nail which holds and insures safety see that your shoer uses "Capewell" nails.

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By making late plantings you can have plenty of early vegetables, such as lettuce, peas, beans, and beets, in your fall garden

How I Plan My June Garden to Provide for Fall and Winter

By F. F. Rockwell

I ALWAYS wonder, when I see a farmer's garden that has "gone to seed" early in the autumn, why he didn't take just a few hours in June to provide crops for late fall and winter.

Again and again you'll see farmers' gardens that are full of stuff during the summer months, but which will provide nothing for the winter larder except possibly a few heads of cabbage.

Vegetables that are grown for fall and winter will save more money than the things that are used during the summer. And, as a matter of health, vegetables are in every way desirable to add to the regular winter diet. That they are not more generally grown, I am very sure is due to the fact that farmers have not learned that there's a regular time to plant the winter garden.

Once you discover that vegetables for fall and winter should be planted in June and early July, you'll attend to it just as part of the routine of planting. Then you'll always have plenty of table vegetables from September to March.

During the first part of June sow a packet or two each of cabbage, cauliflower, and Brussels sprouts. For the cabbage I always use a medium-sized solid-headed variety such as Volga, Glory of Enkhuizen, or Danish Ball Head, rather than the big sorts. They are easier to store, mature in less time, and are more convenient for home use.

BOTH cauliflower and Brussels sprouts are grown in much the same way as cabbage, and make a very agreeable variety in the bill of fare. The sprouts will keep outdoors until well into the winter, as frost only improves them. I always plan to have some for Thanksgiving and Christmas dinners.

I sow the seeds of the above very thinly, and cover about one-half inch deep, pressing the soil down firmly. After a rain is a good time to sow, or, if the soil is very dry you can open a trench, fill it with water, and sow on the moist surface as soon as the water has soaked away.

When the little plants are two or three weeks old, I thin out to stand four to six inches apart. This is absolutely necessary in order to get sturdy plants. Transplanting is done during the first part of July, or four to six weeks after seeding.

Many farmers have an idea that about all carrots and beets are good for in winter is to feed to stock. That's because they've never grown them so as to have them in proper condition for winter table use.

Saving the surplus of the summer garden for winter use does not work well with the root crops such as carrots, beets, and turnips. Even parsnips are much better if not planted until later than is usually recommended.

I plan to make a generous-sized planting of carrots about the middle of June, and of beets by the first of July. They are then of nice table size when it's time to store them in the fall. Parsnips can go in any time from May 1st to June 15th. Rutabagas need nearly a month more.

During the latter part of July and early August, second plantings of many of the early crops, such as lettuce, peas, cucumbers, spinach, dwarf wax beans, etc. For this late planting, I use early varieties. If you will take the slight trouble to follow this plan, you can have beans, lettuce, and other good things right up to frost, whereas the average garden is quite bare of them at this season.

I ALWAYS lay in a supply of insecticides before there is likely to be any immediate need for them. To control the plant lice, or aphids, I have for many years depended upon 40 per cent nicotine sulphate, which is sold under several trade names. With me, if used in time, it means complete control. This is for all insects that suck the plant juices from below the skin.

For chewing insects, such as the potato bug and the various caterpillars, I use arsenate of lead. If bought in the powder form, it can be used as a wet spray, or dust on such things as cabbage, where a wet spray will not stick.

For the various forms of mildew and blight I keep a supply of Bordeaux mixture on hand. But I don't wait for the blight to start before using it. I plan to give the garden a sort of general going over every week or so, spraying everything that is likely to be attacked, such as potatoes, peas, melons, and beans. It costs little and is a good crop insurance.

In using any spray the great secret is to do a thorough job. If any part of the plant escapes, enough of the insects or the disease spores will survive to reproduce rapidly, and make conditions as bad as they were before. The next most important thing is to begin early. That's why I get my materials for spraying well in advance.

If the finished product always looked as good as the pictures in the seed catalogue, how much happier some gardeners would be! Tested and tried varieties are always safest.

My Boyhood on a Middle-West Farm

(CONTINUED FROM PAGE 15)

needed more than what they had. Sometimes you don't know what you want until you see it.

I look back with pleasure to the little homely things that made up much of those years on the farm, and do not now regret whatever of hardships there were. The hard labor, the frost-bitten fingers, and toes and ears in doing winter chores and other farm work, while going to school at the same time, have long since quit hurting. They were things that had to be done by somebody. And there were many pleasures as we went along.

In winter-time there were hand sleds to make and coasting and skating to enjoy. In summer-time our wagons were to make and mend. The first warm days of spring brought barefoot time, and soon sore toes to show envious neighbor boys who had not as yet, perhaps, acquired any of their own. The old swimming hole was still there from year to year, and must be utilized. The game of marbles must not languish, and stilts had to be made and tried out as a means of locomotion, though more toilsome than to walk on your feet. Oh, to be brought up on a farm was not so bad.

I HAVE never been back to the places where I lived as a boy in Indiana and Iowa, since we left there. In this country sixty-five years will make a change in any locality. Indiana being older and more thickly settled, perhaps the change has not been so great there; but I wonder if now I could recognize any of the surroundings of the old home neighborhood. I suppose the landmarks by which the old scenes would be recognized are gone. The dense woods that almost surrounded the old farm I suppose have been cleared out to make more fields. The spider-like bridge that spanned Big Pipe Creek on the old Strawtown Road on our way to Peru to do our weekly trading, and of which I was always afraid, for the planking rattled and the frame vibrated, I suppose has long since been replaced by one of steel or iron. The old cobbler who lived at the cross-roads and mended our shoes, and whose twin boys were my playmates at school, is not there now, very likely.

The near-by neighbor's girl who told my fortune by the lines of my hand, and said I would live to a hundred years, I suppose married and possibly is still living happily. The old log schoolhouse where I tried to study the three R's and play the strenuous schoolboy games surely is not there now; modern progress would not permit it.

The beautiful poplar groves, on another man's land, but in plain view from our back door, I fear are gone, cut down to make boxes and furniture drawers, and to clear the land for another field.

Did you ever think of what might happen to the world if all the trees and forests were cut down? What would become of the little saucy, frisky mammals that make the woods their home? What would become of the birds, with their nesting and resting places gone? They would all have to become chimney swifts, barn swallows, or cliff dwellers. The creeks and rivers would all dry up and drought would accompany the seasons.

"Woodman, spare that tree!"

THE old Iowa neighborhood is not so remote from where I have since lived, but I have not seen the little town nor the broad prairies since we trucked southward after those cold winters. But a correspondent tells me those rich prairies are now worth \$200 an acre—I presume in farms. The county then had 1,000 or 1,200 inhabitants, now it has more than that many thousand, and room and welcome for more.

Iowa was new then; it is now a great State. Then its population was little more than a half million, now it is about five times that. It then had but one railroad, running to Iowa City from Davenport, where it crossed the Mississippi River from Chicago over the first bridge built across that great stream. Now the railroad mileage of the State is more than 10,000.

If we could, would we dare call the old days back, to live them over again, to correct the mistakes that we made, only, perhaps, to make greater ones? Better let well enough alone and pass on. Ponce de Leon sought the Fountain of Youth that could make the old young again, but found it not.

[THE END]

MOLINE

The Universal Tractor



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This is the reason for the great success of the Moline Tractor. It is built on the correct principle. One man with one tractor does all field work from plowing to harvest.

Moline Power Farmers are increasing production and decreasing the cost of production.

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You will find the Moline Universal Tractor a sure, safe, satisfactory and highly profitable investment.

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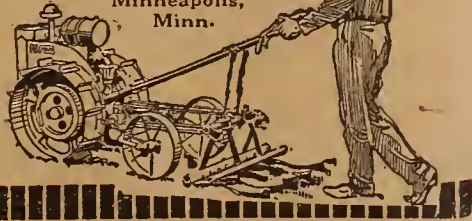
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Dear Sirs:—Used your Corn Harvester this season, it does better work in large corn than in small corn. I cut 68 shocks, 12 hills square, and did my chores morning and evenings. The soil was black and loose and the Harvester did not seem a load for a light horse.

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Turn waste into profit—can everything the Cold Pack way in a National Canner. Booklet free.

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Improved Ohio Farms For Sale

THE Miami Conservancy District, which is a political subdivision of the State of Ohio, offers several hundred of the best farms in the state for re-sale.

This surplus acreage includes farms that range from ten acres to any size you might desire, located right in the heart of Ohio—the fertile corn raising Miami Valley.

Each farm is under cultivation and is a big profit-paying, prosperous business. Some of these farms raise corn year after year with no artificial fertilizer or crop rotation.

This farm land is all within a thirty mile radius of Dayton, with easy access to quick, profitable markets by rail, interurban or highway.

For booklets giving complete information address "Farm Division."

THE MIAMI CONSERVANCY DISTRICT
DAYTON, OHIO

Two Things You Can Do to Get More Money Out of Your Hogs

[CONTINUED FROM PAGE 7]

and the market. At the time, hog prices were way down, and it was a losing proposition. Every man I talked with was disgusted, and I was told that such a condition was causing farmers to sell their corn and the brood sows which they had planned to breed for spring pigs.

When I asked the Illinois man if conditions were similar in his locality, and if he too was to breed fewer hogs, he replied: "No, I will breed more sows than I usually do. I figure on keeping about 50 per cent more than usual. My brother has doubled his sows, buying from farmers in our section who want to sell because of the low market. I am losing a few dollars on this consignment, but indications are that the spring crop of pigs will be short, and this means high prices. I will make back next year what it cost this time."

Since the close of the war the hog market has been gradually returning to normal—that is, the packers have come into the market, and are looking mostly for butcher and light hogs. Lard consumption in this country has decreased very materially in the last ten years, housewives now using vegetable oils for cooking purposes.

All of the things mentioned in this article are my observations while I reported the Chicago market, and I believe they are worth studying.

NOTE: This is the second of a series of marketing articles by Mr. Delohery. The third will appear in an early number.—EDITOR.

Do You Get Your Money's Worth Out of the Horses on Your Farm?

[CONTINUED FROM PAGE 22]

grass also are popular with horse feeders in the districts where these grasses thrive best. The farmer feeds his cows upon the hay containing the most clover, and his horses are given that which has the larger proportion of timothy and other grasses. Idle horses often are fed well-saved marsh hay, and that which contains a good admixture of blue-joint or bluestem grass is of fair feeding value. One should, however, be sure that such hay does not contain much "horsetail," also called "sour grass," as it is poisonous to horses. Coarse, wiry swale hay is poor feed for horses.

Alfalfa should be about mature before making into hay to be fed to horses. It is rich in protein and, fed in excess, is somewhat loosening, and also irritating to the kidneys. It balances well with corn as a ration for work horses. All hay and other feed for horses should be free from mold. Moldy hay and bin-heated or "foxy" oats commonly cause troublesome diabetes.

Green grass is the best of all feeds for "cooling out" a tired work horse that has been heavily "grained." If his shoes are removed, the moisture and coolness of pasture also greatly benefit the horse's feet. Change to grass should gradually and carefully be made.

Bright oat straw is much used for the feeding of idle work horses, brood mares, and growing colts. So is fresh, sound corn stover or fodder. Cornstalks and corn fodder that have weathered in the field should not be fed. Thickly sown corn, cut and cured green as hay, is excellent feed, and greatly to be preferred to mature corn stover or fodder for the feeding of idle horses, and a little of it may be fed with advantage to the working draft horse.

A work horse requires from 75 to 100 pounds of drinking water a day, and it should be cool and pure. Keep the watering trough clean, and prevent horses from drinking from ponds. Theoretically, water should be given before feeding. A horse, in nature, takes water any time he feels thirsty, and experiments do not show that the drinking of water after a meal is nearly so injurious as has been claimed in textbooks on horse management. It is certain, however, that the hot, tired, thirsty horse should not be allowed to drink all the cold water he wants, but should be allowed a few swallows of it, and then be fed a pound or two of hay while cooling off, after which he may have all the water he wants and then his grain feed. Horses working in the field during hot weather should be given a little cold water often during work hours.

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Clark Grave Vaults are backed by 20 years of "quality production" and recommended by conscientious undertaking firms. For illustrated booklet of proof, address Dept. B-25.

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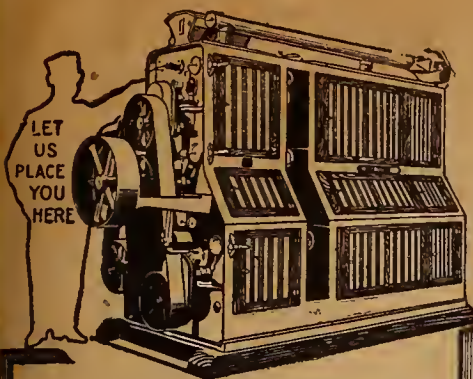
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a big knee like this, but your horse may have a bunch or bruise on his ankle, hock, stifle, knee or throat.

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Grind your home-grown wheat, supply your community with flour and feed. You save the freight on the wheat going out, and the flour and feed coming in.

Besides earning the regular milling profits you get the extra profit of making "A BETTER BARREL OF FLOUR CHEAPER" on the famous "MIDGET MARVEL." The new process, self-contained, one-man, roller flour mill that is revolutionizing the milling industry. It requires less than half the power and labor of the usual roller mill and makes a creamy white, better flavored flour that retains the health building vitamins and the natural sweet flavor of the wheat.

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The Anglo-American Mill Co.

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You Can Have Flowers Too

FOR the busy woman who cannot spend as much time with flowers as she would like, but who still wants to beautify her home with summer annuals, a border bed along a fence is the most practical. A width of three feet makes a bed that is convenient to work with, and it can be any length, the longer the better. One of the prettiest borders of this kind I have ever seen was over ninety feet long, and contained about every tint of the rainbow.

The taller plants, of course, belong next the fence, making a splendid background for the shorter ones. It is best to start the seed in flats, transplanting later, thus getting the largest and best plants in the most conspicuous places. Much time can be gained in this way by avoiding all danger of frost.

One year I used summer cosmos for my backing with blue larkspur in front of them, and bush nasturtiums at the edge. These nasturtiums were the large flowering Tom Thumb variety, and stood erect, each individual plant a compact bush in itself. They bloomed abundantly from late spring until frost, the different shades of yellow blending well with the blue of the larkspur. Along a back fence that same year I planted dwarf sunflowers, which furnished feed for the chickens in addition to furnishing entertainment for the entire family. We loved to watch them turn with the sun.

Another quick grower giving splendid results is the old-fashioned zinnia. Seed houses are advertising a conical zinnia which, as the name implies, is cone-shaped, and rather blunted at the top. It grows to be about two feet tall, and comes in all shades of red, yellow, lavender, orange, and pink. A pretty combination with this is white candytuft, a low-spreading plant which, when covered with bloom, resembles a snowdrift.

A TALLER bed may be had by planting ten-weeks stocks, a flower something on the order of the hollyhock, using the double marigold and the Chinese woolflower to fill in. The woolflower, in habit, is somewhat like the aster, although blooming a little earlier. The stem is square and transparent like the snapdragon, and the bloom a deep crimson, resembling nothing so much as a bunch of wool yarn.

The summer kochia, sometimes called burning bush, makes a restful pale green border. During the summer months it forms a hedge, two feet high, of the daintiest green imaginable, and does not develop any color until touched with frost, when it turns a lovely claret-red.

The portulaca goes well with this unusual green, furnishing plenty of color for the entire bed. This makes as "easy" a flower bed as the busiest woman could wish for, as the portulaca doesn't require the attention that most quick-blooming flowers do. They bloom and seed at the same time—quite different from the fragrant nasturtiums. To allow nasturtiums to seed is to shorten their life by about half.

At one time I found that I had cut out a big contract for myself when I covered a 40-foot fence with the climbers. They were beautiful, a brilliant mass of clean yellow and red blooms, hiding the fence completely and lightening up an otherwise dreary view. Sometimes I got almost a peck basket full at one picking, and I went over them at least every other day.

Perhaps the most satisfactory border is the one containing a reckless profusion of a dozen or more varieties. This can include verbenas, the broad-flowering zinnias, salvia, both red and pink, California poppies, as well as the tall silky favorites, four-o'clocks, petunias, argemones, cockscombs, cornflowers, and heliotrope for fragrance. These, with the exception of the poppies, will all stand transplanting.

Last, but by no means least, plant all kinds of asters, and be sure to include a blue flower of some sort. Blue larkspur or cornflower for the earlier blooms and blue asters for the later, do very nicely. This gives a gay rioting effect that is very pleasing.

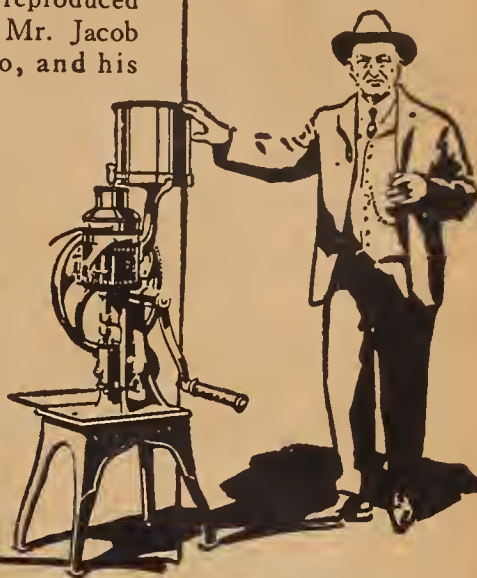
IF YOU have a good farm record, you can, with the expenditure of a few minutes each week, have a check upon your business, and can at any time see where you are making money and where you are losing it.

DURABILITY OF THE DE LAVAL

This illustration is reproduced from a photograph of Mr. Jacob Rimelspach, in Ohio, and his DeLaval Separator, which has been in use for over 25 years.

The machine was brought in on a local De Laval Service Day to be looked over by the service man.

There was nothing the matter with the separator, and after it was cleaned up and oiled Mr. Rimelspach took it home with the comment that it ought to be good for another 25 years.



The De Laval Separator gives the greatest value for the money, because it gives better and longer service. Mr. Rimelspach's experience is equaled by the records of a large number of De Laval machines.

Considering its greater durability alone, the De Laval is the most economical separator to buy; and with its cleaner skimming, easier running, greater capacity and unequaled service, the price of a "cheaper" machine is high in comparison.

If you don't know the De Laval agent in your community, write to the nearest De Laval office

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\$44 Buys the New Butterfly Jr. No. 2 1/2
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lifetime against defects in material and
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2-ply Remnants \$1.10 per roll (Just like \$2.80 regular grade)

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Also extra special bargain in Red and Green slate surfaced remnants at \$2.00. This just like first grade, which sells for \$5.00 per square, except that slate surface is not put on as smoothly.

Also our first grade roofings at 20% less. Send for price list and samples today.

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before harvest

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Is the straw stiff enough to stand? For five years wheat fertilizers have contained no Potash.
Will it yield as much as you hoped? Enough German Potash has now come forward, so that those who wish can buy wheat fertilizers with 4 to 6 per cent of
Is the clover or grass stand in it good?
If not, think over the matter of using a fertilizer that will help you.

REAL POTASH

Go at once to your dealer and tell him what you want and insist that he get it for you when the fertilizer salesman makes his first call.

Potash Pays

SOIL AND CROP SERVICE POTASH SYNDICATE, H. A. HUSTON, Manager
42 Broadway New York

Our Letters to Each Other

This is where we take a few lines every month to talk things over, so if you've got anything on your mind, let's hear from you

I WAS much interested in what a Western Reserve dairy farmer said to Clark B. Firestone of the New York "Evening Mail" about the proposed combination of agricultural and union labor interests to fight the capitalist.

"All that is necessary," he said, "is to breed a seven-hour cow for the seven-hour laborer to milk. Our cows want to be milked twelve hours apart. Make the interval between milkings shorter, and they sort of dry up. Allow twelve hours between milkings and an hour before and an hour after to do the feeding and the caring for the milk, and you get the standard farm day, which is fourteen long hours. On the platform of a fourteen-hour day or a seven-hour cow, we are willing to get together with union labor."

I wish I knew that farmer's name. I'd like to pat him on the back and do him honor by spreading his name broadcast through the nation.

A Bitter Dose

A brief dispatch from Copenhagen, Denmark, says that "a majority of the Danish farmers, who are the backbone of that nation, are exasperated over the continuous labor troubles which are preventing the transport of farming produce, and contemplate direct action by cutting off the industrial labor centers from agricultural produce, meat, and grain until the strikes are stamped out among the bakers, masons, seamen, longshoremen, and others."

That would be a very bitter dose of their own medicine, but if it comes to pass, in Denmark or any other country, it will be industrial labor's own fault.

The great trouble with labor to-day, both organized and unorganized, is that it is bitten with the idea that it can get something for nothing. That idea is as old as the world, and millions of persons have tried it out, but it has never paid any dividends.

We have got to come to our senses and go to work *individually*, or else keep on suffering from our own upheaval *nationally*.

Thanks, E. J. W.!

E. J. W. of Kentucky says he finds articles in FARM AND FIRESIDE that are actually worth dollars and cents to him, personally. And in appreciation of this he sends along a little item that he hopes will be worth dollars and cents to you, personally. That's the kind of magazine that FARM AND FIRESIDE likes to be and tries to be, so here's E. J. W.'s contribution:

"I find that if you husk your corn in the crib, putting the bad corn and small ears in one pile for the hogs and the good corn in another for the horses, it is worth lots more to you than filling your basket up and going from one horse to another husking your corn.

"You will give your horse bad corn that you would not have given him if you had sorted it in the cribs. It also gives you a chance to feed lots quicker if you will husk up a lot of corn on a rainy day when you cannot do anything else.

"Now, if you have not been doing this and will put it into effect, this article is worth at least \$1 to you for every rainy day you spend in your corner."

We Answer Mr. Cable

Roy G. Cable calls my attention to an Illinois questionnaire to farmers which asks these three questions:

Do you favor nationalization and public ownership of the farms of the United States?

Do you believe private operation would be more efficient?

Do you believe farmhands should have a voice in management and share all profits of farms they happen to be employed on?

Mr. Cable asks me to tell him how I would answer these three questions: I would answer "No," to the first, "Yes," to the second, and "No," to the third, with reservations.

I am against nationalization of farm lands for the simple reason that it would destroy individual initiative. It would

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The National Farm Magazine
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You are invited to ask questions of any or all of these people in their respective fields. State your problem clearly and fully, enclosing a stamped self-addressed envelope for reply. Address each editor care of Farm and Fireside, 381 Fourth Avenue, New York.

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kill that spark of divine discontent that burns in every human heart, and spurs you and me and every one of us on to farm better, so we can earn more, so we can get the money to possess a piece of the soil that we can call home. Destroy that, and you have destroyed the foundation of all human progress, which has its base in individual progress. If you want a man to work, you've got to give him something to work for.

I certainly don't believe that farmhands should have a voice in management and share all profits. But no one can give a blanket answer to such a question. It is an individual proposition.

If your farmhand knows farm management, he will soon demonstrate it, and you will gladly get his ideas and use them and compensate him accordingly if you yourself are a good farmer. If your farmhand knows nothing of management, you would be a fool to give him a voice in the management of your farm, no matter how much you might believe in the idea. If your farmhand knows something of management, and you haven't the sense to see it and take advantage of it, he need not worry, because his ability will sometime get him a farm to manage, whether it is yours or not.

As for profit-sharing, if you are inclined to that idea, you can do what many farmers already have done: set a standard of production for the men on your place, and tell them that you will give them a certain specified share of the return from all production they accomplish above that amount.

There is my answer. Either it is sense or it is nonsense. If any of you readers have any comment or criticism, I would like to have it. Also, if any of you have worked out a profit-sharing plan for your farmhands, I wish you would write us in

detail just how you do it. I would like to print some good letters on that subject, and I'll pay for those printed.

The Hand's Wife Again

Speaking of farmhands, here is another letter from a hand's wife, somewhat different from the one we published before, and so full of common sense and straight thinking that I am going to give the balance of the page to it this month:

"The farmhand's wife must have grit and courage. If she is lacking in these essentials, her husband is doomed always to be a hand, and probably a poor one at that.

"No man can keep up a maximum of work on a minimum of peace of mind. Unless his wife has the courage of her convictions and can imbue her husband with her enthusiastic determination to forge ahead, and can keep him well fed and contented at the same time, he won't be able to climb out of the rut of paid farm labor, and less to earn that same pay.

"How is she going to do it? Well, let's first see what manner of man the farmhand is:

"A farm hand is generally raised in and not educated to the work, by being born on a farm, and knowing no other means of livelihood. Also, the desire to own a farm of his own is

born with him. If he is of poor parentage and cannot expect financial assistance from home, he naturally gravitates to some other locality, and begins the grind of poorly paid labor to reach his goal. Nor is the farmer entirely to blame as long as unskilled labor can compete with the man who knows.

"Then when the hand marries, the fun begins. If his wife is thoughtless, he suf-

fers lack of care and encouragement. Again, if she thinks too much, making it necessary for her to do some of it aloud to her friends, he suffers at the hands of his employer. She may criticize the house she is "forced" to live in, the wages, the employer, his wife or their children, and no man, farmer or otherwise, will tolerate that.

"Of course, in other cases, the farmer's wife, feeling her superiority, will condescendingly allow the hand's wife to sit in the kitchen while she pities her or brags about what she has. Poverty being only inconvenient and not criminal, the hand's wife resents that, and the result is that the man leaves before his contract has expired, because he can't stand the upheaval at home. He is blamed for being a quitter when in reality he is a faithful, conscientious worker.

"Personally, I have circumvented such a condition. My husband has been with his present employer for about two years, and I have never been in their home or they in ours. We speak pleasantly when we meet, which is seldom, and there all intimacy ceases. It is true that circumstances here are not all we could desire, and we are anxious for the time to come for moving.

"So, getting back to generalities, the hand's wife has much to bear. She is looked down upon in the community because of her husband's position, no matter what her breeding, intelligence, or attainments may be. She must keep her house bright and clean; ample food, well cooked, for her family; her children in public and Sunday school; put money in the bank to show her thrift; and all on a monthly wage that a man in the city would not consider proper remuneration for a week's employment.

"If she doesn't do all this, her children must follow in their parents' footsteps, for the long-desired farm will never materialize. The children will go to near-by towns or cities, and their parents grow old in poverty, or follow to the city, to live in misfit unhappiness to the end.

"If more farmers will give thought to the domestic comfort and happiness of their hired men, the labor shortage will be a thing of the past. Why, there won't be enough farms to employ the 'hands' that will come flocking back from the city; for, once a farmer, always a farmer at heart.

"Also, don't forget that your married hand has a wife who loves him, is proud of him, and just as ambitious to be a prosperous landowner as you once were. Treat her as you would want your wife treated under similar circumstances. It won't cost you much to paper the sitting-room next spring, or mend the front steps. You might even furnish her with screens, and then her enthusiasm will flame so high that her husband will perforce reflect a great measure of it. The harder your hand works for his own future farm, the harder he will work on your present one.

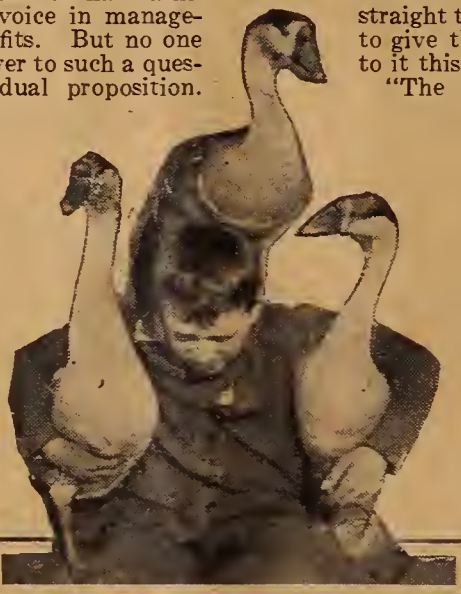
"If statistics are wanted on the farm-labor situation, have the county agent visit, not the farmer, but the hand's wife. If she knows it is confidential and will not harm her husband, the agent in many cases will gather some inside information that will be surprising.

"Don't think for a moment that I am condemning all farmers, for there are thousands that are excellent employers, but some I would not hire to for thousands. But to the farmer that this shoe pinches, think of the other side of it—the farmhand's home and wife."

Well, Mrs. Farmhand's Wife, all I can say is that I know that women do peculiarly respond to a little attention and consideration, and I believe you're right when you say that it won't do the farmer any harm to give his hand's wife a thought. Nor would it do any harm if the farmer's wife followed suit. Thousands of them do, I know, but other thousands don't.

We certainly got some fine pictures from you FARM AND FIRESIDE readers in our picture contest. The first-prize winner is going to be painted for a cover, and a page of the other winners will appear in the July issue. Don't miss them! They're great!

George Martin



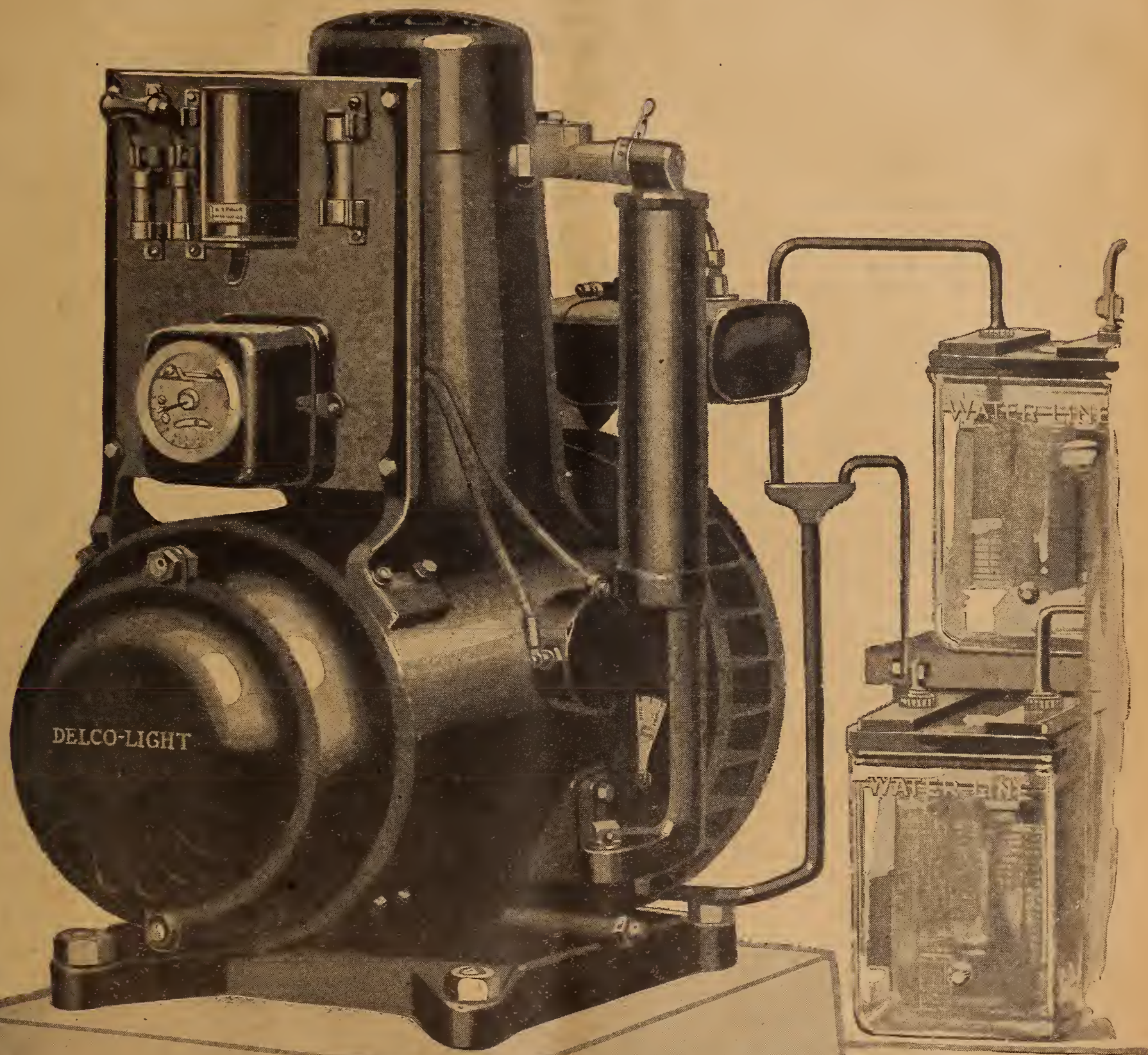
A REAL farmer and poultryman at the age of twelve is Johnnie Myers, of Carroll County, Maryland. As club member, he grew 85 bushels shelled corn on his acre last year, and captured second prize.

Last May he invested \$2.40 in one dozen Brown Chinese goose eggs, had eight goslings to hatch, lost one and raised seven, sold four for \$16.84, the remaining trio, shown in the picture, are his start for the coming season, and he values this trio at \$15.

His father furnished the feed, so it left a profit of \$29.44 for Johnnie. Good boy, Johnnie!

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AS statements like this make apparent, more and more farmers are preventing the bruising of fruit, mutilation of delicate vegetables and much shrinkage in livestock by hauling on Goodyear Cord Tires.

In this way they reverse the situation that existed when solid-tired trucks or wagons were used with a resulting loss in crops, stock weight and general income due to slow, jarring transport.

On the resilient Goodyear Cord Tires a farm truck delivers smoothly and quickly, safeguarding the original condition of the load so as to secure the best prices for it.

The able pneumatics thus become important factors in the marketing of perishable produce and carefully fattened animals, as well as in practically all the work of raising and handling on and off the farm.

The excellent and often unusual mileages obtained from these tires attest the toughness of Goodyear Cord construction developed with that extraordinary manufacturing carefulness which protects our good name.

Farmers' records, detailing how pneumatics assist crop moving, motorization, chores and other activities, can be obtained by mail from The Goodyear Tire & Rubber Company, Akron, Ohio.

GOODYEAR
CORD TIRES

Overland
TRADE MARK REG.

Stamina

STAMINA is the power to suffer blows without succumbing. The Overland, on the new *Triplex* Springs, has lasting strength and staying powers because it has in-built stamina.

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March 3, 1920, a stock Overland finished a test run of seven days and nights over frozen Indiana country roads. It traveled 5,452 miles in 168 hours continuously. Yet under this ceaseless pounding it never failed or faltered and finished ready to run the gauntlet again.

Blazing the Trail for the Army

From July 7 to September 6, 1919, three stock Overland cars blazed the trail for the U. S. Army Engineers in their famous cross-continent drive. These cars covered almost impassable roads in all kinds of weather and in all altitudes. They proved again the marvelous stamina of the Overland, the modern light car.

42,104 Foot-Pounds Blow on Spring

Daily at the last annual Stock and Horse Show at Denver, Colorado, a stock Overland leaped eighteen feet, clearing a five-foot hurdle. In landing it sustained a blow of 42,104 foot-pounds on its spring system. On *Triplex* Springs, designed to ward off the jolts and jars of the roughest roads, it emerged with not so much as a cracked shackle bolt.

Races 25,000 Miles in Pursuit of Speeders

The Houston, Texas, police use an Overland day and night in pursuing "speeders." Since October, 1919, the car has covered more than 25,000 miles, much of it at 35 to 45 miles an hour. And in that time there has been absolutely no expense for mechanical upkeep. Because this car has never failed its drivers, six more Overlands have been purchased for similar arduous work.

YOU never would want to put your car through such punishment, but it is gratifying to know you *could*. Power plant and body are cradled upon the marvelous *Triplex* Springs, which create riding qualities undreamed of in a light car. They lower upkeep costs. They guarantee Overland Serviceability.

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Sedans, Coupes, Touring Cars and Roadsters



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1920

Midget
Clay Targets.410 Caliber
Shot ShellsWinchester .410 Caliber
Family Shotgun

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AN entirely new family recreation—wholesome, invigorating, and very enjoyable—comes into the family circle along with the new Winchester Junior Trapshooting Outfit. The neat and handy kit which equips you completely for junior trapshooting.

See it at your local hardware or sporting-goods store. You will notice at once that it is built for service—a practical unit for modified trapshooting, with full instructions.

Try the Winchester .410 caliber Family Shotgun at your shoulder. Test its fit and balance. Note the usual Winchester construction and finish—from buttplate to muzzle, an example of good gunmaking.

We believe that the more you know about guns the better this one will please you, especially when you consider it as a family gun.

Examine the little .410 caliber Shot Shells—made exactly like the Winchester standard trapshooting shells. Fired in the new Winchester .410 bore Family Shotgun, they give in reduced form the same target-pulverizing shot pattern for which the larger Winchester Shotguns and Shells are so popular.

Inspect the new Winchester Junior Hand Trap. This interesting device, with which anyone can send the Midget Targets soaring—just

like the regular clay “birds” at a trap shoot—is itself a source of good fun.

ALREADY POPULAR

Almost any boy or girl old enough to shoot a small rifle can handle the little .410 Shotgun, and will do so with delight. Any woman who would like to shoot and is not afraid of a golf club, a tennis racket, or a pair of skates, will take up the sport with surprising interest and pleasure. The *kick* and the *bang* have been so largely eliminated that they are hardly noticed.

Men and boys used to shooting larger shotguns are even more enthusiastic. Hitting the speedy Midget Targets is good practice, too, for nearly every kind of shooting.

TAKE IT ALONG, ALWAYS

There is much more pleasure on an outing by automobile, canoe, or boat, if you slip your handy W. J. T. case under the seat. And with proper care your gun and trap will last indefinitely.

Let everybody shoot at the same number of targets. Arrange handicaps and keep scores. Then see how enthusiastically all will look forward to *next* time.

Take a Winchester Junior Trapshooting Outfit home with you today. If your dealer cannot supply you, write to us for complete information and the address of one who can.

